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CAPE COD
AND
THE OLD COLONY

BY

ALBERT PERRY BRIGHAM, Sc.D.
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With 35 Illustrations and Maps

G. P. PUTNAM'S SONS
NEW YORK AND LONDON
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1920

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ALBERT PERRY BRIGHAM

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THIS STORY OF OLD COLONY SHORES
OUTPOST OF NEW ENGLAND
ENVIRONING MEN OF OLD ENGLAND
IS INSCRIBED IN MEMORY OF
ANDREW JOHN HERBERTSON
PROFESSOR OF GEOGRAPHY IN OXFORD UNIVERSITY
LOYAL FRIEND, TEACHER AND INSPIRER OF MANY
CREATIVE THINKER IN THE REALM OF MAN'S RELATION
TO THE EARTH

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PREFACE

THE author made his first and long deferred visit to Cape Cod in the summer of 1915. There on the highlands of Truro, with their superb air, marvelous views and the freedom of untrammeled nature, the Cape cast its spell upon him. Fugitive excursions on the upper parts of the great foreland revealed to him its variety of beauty and its significant history sent him to libraries where loving annalists had written what they knew and felt about the land of their fathers.

Old as the Old Colony is in the story of America, it is not well known, and even those who visit it have small means of understanding its hills, lakes and shorelines. Thoreau saw but a small part of the Cape, and that in a remote time when its physical evolution was unknown and the human unfolding lacked the stages of the last half century. Other writers have touched the life and lore of special places, leaving room, it would seem, for a study on broader lines, and savoring a little more of the order which a student of science would try to give it.

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The volume is not a history and it is not a geography, though it cannot presume to be quite innocent of either subject. While explaining rather carefully the physical features that lie all about Cape Cod Bay, the real motive is the way men have used these lands and waters and come under their influence. Old Colony men have been bred to the sea, but they have had a developing continent behind them. Salt waters and the opening of wide lands have interplayed in the destiny of the Pilgrims and their children. How the first colonists and those who followed them have adjusted themselves to the mobile conditions of nature and of man, is the theme of the chapters that follow.

Many obligations have been incurred—so many indeed, that all must be generally acknowledged save one. Professor J. B. Woodworth of Harvard University has for many years observed and written upon these frontier lands of Massachusetts, and has generously placed his knowledge at the disposal of the author. Chapters II and III gain much in fullness and accuracy through this contribution of friendly aid.

A. P. B.

April, 1920.

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Cape Cod
and
The Old Colony

CHAPTER I

THE PILGRIMS AROUND THE BAY

STANDING on the high moors of Truro on a clear day, one may see the circuit of Cape Cod Bay. Low on the horizon are the woodlands that lie back of Barnstable and Sandwich, the cliffs and forest crown of Manomet, the Plymouth shore and the Standish monument rising from Captain's Hill in Duxbury. Or if one stands on Cole's Hill above Plymouth Rock, he discerns twenty-five miles eastward, the Pilgrim monument at Provincetown, which, with its dune foundation, rises more than three hundred feet above the surface of the Bay. At night, Highland Light with its fourfold

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flash will gleam across the water in neighborly fashion. Likewise from Sandy Neck or Yarmouth Port, the Provincetown monument rises in the north as if out of the sea. Thus Cape Cod Bay is not so vast as it seemed to childish eyes, as they searched the atlas map, to answer the questions of location which in the old days were called geography.

Keeping our perch on the highlands of Truro and turning eastward—there is the outside of the Cape—the Atlantic Ocean; and the imagination, if not the eye, reaches across the waters to the Bay of Biscay, Lisbon, Cadiz, and Gibraltar. The transatlantic voyager does not see the Cape in these days, but for many a traveler in the early time this foreland was the first to approach and the last to leave, and the coastwise traveler must always pass it within neighborly distance. Cape Cod belongs to the ocean and it belongs to the continent, a kind of hinge on which the new continent swung open to the old, a little wilderness which quite unconsciously became a pivot of modern civilization.

Geologically speaking, New England is old, all but the southeast corner of it, and that is young. Historically however this wave-washed bit of country is old, as the white man counts time in the new world. In its

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shape and its making here is a unique foreland. The physiographer does not know any annex to any continent that is just like it. Other narrow peninsulas there are, enough of them, Cornwall in England, Kintyre in Scotland, the threadlike Malay peninsula, long promontories in the fiord regions of Alaska and Norway—but these are all rocky and rugged—nowhere else is there a frail, glacial peninsula, standing out seventy miles into an ocean, with bedrock so far down that no sea chiseling and no boring has ever reached a square foot of it. And here Cape Cod has maintained itself, losing on its borders but still surviving, during some thousands, perhaps many thousands of years, against the fierce onset of the unhindered Atlantic.

The shores of Cape Cod Bay, east, south and west, are the lands of the Pilgrims. Duxbury, which has its name from the Duxborough Hall of the Standish family in England, is almost due west from Provincetown and the tip of the Cape. At Provincetown, the passengers of the *Mayflower* landed. At Plymouth, a month later they settled. At Duxbury, some miles north of Plymouth, Miles Standish later chose his home, and here he and the Aldens, John and Priscilla Mullens his wife, lie buried.

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The Pilgrim monument on the dunes of Provincetown is the outer sentinel. At Duxbury, is the Standish monument, the inner landmark of the Bay. At the end of Duxbury Beach, are the Gurnet Lights, answering to Race Point and Highland Light on the outer parts of the Cape. On every side save the north this water was environed with the life of the Pilgrims.

The mainland base from which springs Barnstable County or the Cape, is the south and eastern part of Plymouth County. Like the Cape, it is of recent origin. Geologically, the circuit of the Bay is of one piece—sands, gravels, light soils, moraine hills, lakes, marshes, outwash plains and changing strand belts of sandy cliff and migrating dunes. It is a frail, changing and perishable bit of country.

It is not strange that the *Mayflower* voyagers found the Cape Country—we might almost say that the Cape found them as it had caught other venturesome voyagers in the first twenty years of the seventeenth century. It is easy to forget that at the time of the Leyden Pilgrims a hundred and twenty-eight years had passed since the first landfall of Columbus, and the New England shores were not quite as mysterious to intelligent Englishmen as we are likely to think. Nor did the *Mayflower*

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discover the Plymouth site or even give it its name.

What the Vikings may have done or seen on this coast is not a part of our story, nor need we vex ourselves with historical enigmas concerning the voyager of the sixteenth century. We do know that Bartholomew Gosnold in 1602 anchored in Provincetown Harbor, and gave to the point of land that incloses that haven, the name of Cape Cod. This visit was made when Gosnold was on his way to the attempted settlement on the Elizabeth Islands.

Martin Pring, representing shipping interests in the port of Bristol, came to these waters in 1603, and remained six weeks in Plymouth Harbor. He planted seeds to prove the character of the soil and gathered shiploads of sassafras. He called the place Saint John's Harbor. Winsor's Narrative and Critical History has a vivid passage emphasizing this pre-*Mayflower* familiarity which Englishmen had gained with the Plymouth country. "Thus two years before Champlain explored Plymouth Harbor, ten years before the Dutch visited the place, calling it Crain Bay, and seventeen years before the arrival of the Leyden pilgrims, Englishmen had become familiar with the whole region and had loaded their

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ships with the fragrant products of the neighboring woods."

A few years after Pring's visit, Champlain, an officer of the DeMonts expedition, impressed by the gleaming sands of the dunes, called the foreland Cape Blanc, and in 1614, Captain John Smith, thinking of his king, named it Cape James. This name did not stick, but New England, a designation first used by Smith, fastened itself to the great regions east of the Hudson and Lake Champlain. To have made this contribution to the geographic furnishings of the new continent was honor enough for any explorer. Smith, sailing in a shallop from Monhegan, made a map of the coast, which he took home to his Prince, later Charles the First. It was he, who, using this map, named Plymouth, Charles River and Cape Anne. Other names which he gave did not cling, but these have remained.

It is probable enough that the *Mayflower* company intended to settle farther south, in the Hudson or Delaware country, and that they were turned back by the dangers of the stormy seas in the neighborhood of the Nantucket Shoals. As this is a problem for historians, we need not rehearse the oft-told discomforts and tragedies of the month in Provincetown Harbor, or the various march-

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ings and discoveries on the lower Cape, of Captain Standish and his small company. Here they found, took and later paid for, those first stores of Indian corn, thus getting the seed for the crops on Plymouth fields, the harvests that saved the colony from extinction. This was a blessing which they could as little imagine as they could forecast the prairies rustling with corn three hundred years later, or the institutions of Ohio, Wisconsin and Nebraska, into which their life and their principles were to enter long generations after the plots on Burial Hill had grown green over their bones. Standish explored the lower Cape as far up as Nauset, the Eastham of to-day, and the next project was that complete round of the Bay, made after the *Mayflower* carpenters had gotten the shallop ready. A month had passed and December was far advanced before this memorable voyage was begun. We who know the Cape in smiling summer days may imagine if we can, a bleak winter sea, a few unknown savages on the bordering shore—no home, no light, no life guard, no guiding church steeple, and no goal in the distance save wintry fields and ice-sheathed forests. In these fields and out of these forests in midwinter homes were to be built and the foundations of a new world laid down.

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If anybody knows, nobody seems to tell how much or how little this exploring party knew of the Plymouth that had already been so many times visited. Whether accidents can happen in great events that shape destiny, perhaps we cannot know. What stirs us to this observation is the record of a blinding snowstorm that was falling around the *Mayflower* explorers as they passed the opening into Barnstable Harbor. Here between Sandy Neck Light and the present Yarmouth Port, is a wide gateway inviting a mariner with small craft to quiet and well-protected waters behind miles of barrier beach, and leading up where green meadows, laden orchards and gracious homes now mark the ancient settlements of Barnstable. If snow had not been coming down during a particular half-hour in the afternoon of a December day, in this part of Cape Cod Bay, the beginnings of the Old Colony, of the Bay State, of New England, might have been on Cape Cod, and sleepy old Barnstable might have been the theater of retrospect and rejoicing in the festive days of 1920.

At length, in the cold storm and dim light of waning day, with frozen clothing and benumbed fingers, they drew into the gateway that opened between Pier Head on their left

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CLARK'S ISLAND FROM SAQUISH

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and Saquish Head on their right. Pier Head was the outer end of Plymouth Beach, whose long, narrow belt of sand, then more or less wooded, they could perhaps follow southward toward the point where it springs from the mainland north of the Pilgrim Hotel of to-day. Saquish, on their right, was a glacial hill, an island in those days, not yet tied by its thread of sand to the hill of the Gurnet lights and the long Duxbury Beach. They steered their course northward, past Saquish, and made their landing on Clark's Island.

Rather too much has been said and written and painted about Plymouth Rock, or at least not enough heed has been paid to Clark's Island. This was the first landing place of the Pilgrims, if not exactly in Plymouth Harbor, in the adjoining waters of Duxbury. Too many good people jump on the rock, or photograph their friends under its granite canopy, without knowing that there is a Clark's Island or what happened there. The island, like Saquish or Gurnet, is a glacial hill, barely three fourths of a mile long, around which rise at high tide the shallow waters of Duxbury Bay. There are low cliffs cut by the waters on its shores, a farm home or two and a few trees. On the island is a tablet marking the first landing of *Mayflower* men on the west

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side of Cape Cod Bay, and recording their Sunday rest and worship in a spot, cold enough, bleak enough, while securing these tired and hungry, but devout and determined, men from savage attack.

On Monday morning under better skies the advance guard of the *Mayflower* landed on the site of the real Plymouth, but certainly they were not led by the sturdy maiden tread of Mary Chilton. They had found, and before much time passed, they had definitely chosen the best place around the bay for the Pilgrim home. We shall see what they found there and why they picked the place. What were the things that Plymouth afforded that a group of weary and half-frozen men from over the sea would want?

Not the least boon was a good harbor, and here they found fully protected waters. They set out for a far remove from the old world, but isolation from it was no part of their plan. Relations they would continue to have with it if their king would let them, of fealty, of blood kinship, and of trade. One could not imagine a pioneer American colony planted other than on a tidal water. Most of Plymouth Harbor was and is a clam flat at low tide but there was a channel, now improved for the larger craft of modern years. There

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was moreover abundance of fish and of shellfish. Even at this early time, for a full century, Europeans had known the fishing grounds along the American shores, and while we, conning over school histories, think only of the Cabots and Gosnolds and Gilberts, the Hudsons and John Smiths, troops of fishing ships had loaded their holds there for the markets of Europe. The *Mayflower* people were hungry; at least they were in grave danger of being hungry, and the conveniences for clam digging and cod fishing and eel catching that here offered themselves were not to be despised.

Better than all else here was a strip of cleared and cultivated land. Nobody knows, or ever can know how many generations of red men had lived and died there on ground that was opened by their ancestors and subject to the not ineffective processes of aboriginal agriculture. What it would have meant, in the grip of winter, with houses to build, the sick to nurse and the dead to bury, to prepare forest ground for spring planting—well, there is no need to imagine, for it would have lain beyond human power.

It is not in some parts of Cape Cod a light matter to secure a supply of fresh water, but this problem needed no resolving at Plymouth, for here was Town Brook, though the new-

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comers did not then know the large and lovely water from which it flows and perhaps they did not at first see that here was power for a mill. There are several other streams and springs along the Plymouth shore which they did find, and count among the good gifts of Providence.

There were also ample forests at hand as there are to-day. Among the homes and mills of busy Plymouth one may follow the tourist bent, and forget that now a mile back takes one into a shady wilderness of trees and lakes. No doubt there were larger trees than now, for man had not been much abroad with the axe and the gypsy moth had not carried its ravages over eastern New England. Wood was needed for fuel, lumber for homes and timber for ships, and it was standing but a bowshot from their plantation.

Whether the Plymouth company knew it at first or not, they had hit upon a country almost empty of savages. Only a few years before, some pestilence, whose nature no one has discovered, swept away all the ancient Americans of the Old Colony save a few and left their haunts open and comparatively safe for Europeans. The little company from Leyden had burdens enough and dangers enough, but they did not have at first to meet a horde of

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savage enemies. Finally, a seventh very good feature of Plymouth was the presence of a hill, overlooking the log houses of the first street, commanding the harbor, and best of all, separated by a valley from the higher ground of the forested interior. The advantages of this hill did not escape the eye of Standish, and here they built their fort, planted their cannon, set up their worship, and after the first sorrowful buryings on Cole's Hill, above the rock, hither they brought their dead. After all the most storied spot in Plymouth is not the rock, it is the fortress, the sanctuary, the place of long rest—Burial Hill.

It was right that the Pilgrims should settle not on the long and wave-washed Cape, but on the broader mainland, part of the continent, that stretched, how far they did not know, westward. But that being true, Plymouth has always had and has to-day, a curious isolation. One may approach it through Scituate, and Marshfield, and find a linked chain of settlements, but from any other direction he must go through—with apologies to the dwellers in a few hamlets—a wilderness. This is true whether we choose Whitman, or Middleboro, or Sagamore, as our gateway—in any of these we find an entrance upon the Plymouth woods, upon a country of which perhaps one hun-

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dredth part is under the plough, and a lake, or a cranberry bog is a more common sight than a gathering of humankind. The environment and background of Plymouth, were not suited to make it a Boston, or a Providence, or a Portland—it is Plymouth, and of more worth to Americans, a deeper fountain of noble sentiment because it is just Plymouth.

Of the soil, Bradford wrote of "a spit's (spade) depth of excellent black mould and fat in some places." He names nine sorts of trees and various vines, fruits, herbs and fibers, also sand, gravel and clay, the last like soap and "excellent for pots." Nearly two hundred acres were finally allotted to individuals, after the colonists had experimented with communistic culture, and come close to starvation. They learned that even the stern principles that brought them over the sea could not fully control their human qualities and that some would be lazy if they did not work with the lure of private ownership.

The lands thus assigned lay in a strip about a quarter of a mile in greatest width and following the shore for nearly two miles. It is believed that the choice of these lands by the Indians was due to the running streams which cross them, streams which afforded herring in plenty to be used as a fertilizer.

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PLYMOUTH, LEYDEN STREET IN 1622

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Behind Plymouth and Duxbury Beaches are the combined waters of Plymouth Harbor, Kingston Bay and Duxbury Bay, a protected area about eight miles from north to south, bordered by a much curved shoreline. The explorers liked the Jones River whose borders form the site of the old village of Kingston, but they did not settle there because they would be farther from the fishing, "our principal profit," and because the ground was so thoroughly covered with forest that they would be in danger of Indian attack, "our number being so little and so much ground to clear." These terse quotations are from Mourt's Relation.

The villages of Onset and Wareham stand on northern arms of Buzzards Bay, and are sometimes rather loosely thought of as summer places on the Cape. But what is Cape Cod? It is the peninsula from Buzzards Bay to Provincetown. Strictly it should be the Provincetown spit with its dunes and beaches and the name was at one time so used, Provincetown Harbor being then the Cape Cod Bay. But the usage of almost three hundred years prevails, the Cape is all of that curved extension of the mainland which is Barnstable County.

The Old Colony—what is that? It is Cape

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Cod and a piece of the adjoining mainland from a point on the south shore between Scituate and Cohasset, and following a line running thence to Narragansett Bay, thus taking in parts of eastern Rhode Island. Even Plymouth is sometimes thought to be on the Cape. Untrue as this is, there is close kinship both of the physical and human sort. The same people are there and much of Plymouth County has, like the Cape, a foundation of glacial drift, so deep that the hard rocks beneath the cover have never been found.

Hence the Cape and the adjoining territory form what a modern geographer would call a natural region. It is a unit in its physical evolution—in its drift subsoil, its surface and in climate and flora, and it takes in the vital parts of the Old Colony, Plymouth, Kingston, Duxbury and the whole chain of Pilgrim places from Sandwich and Falmouth to Barnstable, Nauset and Provincetown.

The names Old Colony and Plymouth Colony mean the same thing. The domain included all of Plymouth County except Hingham and Hull and a small part of Brockton. It took in also all of Barnstable County, all of Bristol County and several towns in Rhode Island, but did not include Nantucket or Martha's Vineyard. The description of the

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Old Colony in this volume limits itself to the Cape and the coastal strip of Plymouth, and does not take in the bedrock country lying on the west.

Tourists swarm in Plymouth in summer days. If they come by motor car or on the daily excursion boat from Boston, they see the rock, spend a half-hour among the relics of Pilgrim Hall, go up Leyden Street and look at the headstones of Burial Hill, drive around the Pilgrim monument, and, let us hope, imagine the *Mayflower* at anchor in the harbor. A few go back to Scrooby and Leyden and the older Plymouth, and try to make their own the first humble homes, the sorrows of the first year and the joy of the first thanksgiving.

But it is better to sleep in Plymouth, many times if it may be, and to live into its shores, its streets, its hills and its ancient homes, to find in its modest public library the shelves in the corner that are full of Plymouth books, and thus to share the loving industry and the long memories that have counted no detail of topography or genealogy or local annals too small to be put into record. One can find in almost any town, especially in any New England town, the right people, those who know and revere their past, who will share their lore with the stranger. They are children

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of their soil, born of the blood of those men and women who crossed the sea and laid the foundations. Let Americans fill days in Plymouth, and find their Americanism thereafter true and deep. Whatever may happen with the swift changes of the future, the towns of the Old Colony have not lost their past, and it is inscribed deeper than are the writings on memorial tablets; it is shrined in the harbor, in the outer beach, in Gurnet and Clark's Island and Town Brook, in the old cornfields where thousands of people live to-day, and in the hills, woods and waters of Billington Sea.

Only two miles from the Pilgrim spring and the homes of the Brewsters and Bradfords at the Leyden Street crossing, the closed waters of the harbor end and the bouldery cliffs and wooded heights of Manomet begin. Directly behind the town a walk of barely more than a mile carries one along the full course of Town Brook. The wonder is that the Plymouth people, fresh from their little England, did not call it a river, for it is a strong and perennial stream, though the factories on its banks have partly outgrown this source of power.

A delightful woodland of moraine hills, surrounds the source of the Brook, which is Billington Sea, and these woods, or parts of them, are the great public park of the enlarging town.

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With all its beauty, its restful seclusion, and its wide waters, this playground seems to be little used. It is not easy to reach, and perhaps after all the look of Plymouth is and always will be toward the sea. It is not easy to wean a people from salt water. And it may be, if the Plymouth folk were less conservative, that they would have changed the name of their largest lake, for John Billington was not saintly, living though he did with Brewster and Bradford as his nearest neighbors. The Billington blood seems to have been turbulent, for the elder son of the unhappy pilgrim was the boy that was lost in the wilderness of Nauset and recovered by Standish in a historic excursion down the Cape; and it was Francis Billington, the younger son, who climbed a tall tree, and discovered the inland water which now bears his family name.

From Plymouth before many years had passed, there was a migration northward, but it did not go far, being confined to the borders of Kingston and Duxbury Bays, and the neighboring town of Marshfield. We should look vainly on Burial Hill for the memorials of William Brewster, Miles Standish and of John Alden and Priscilla. These are found in Duxbury, whither these *Mayflower* families betook themselves to establish their homes.

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Here also is the Standish cottage built by the Pilgrim soldier's son, and here on Captain's Hill, in a rough open plot at the summit of the pine-clad slopes, is the Standish monument. Duxbury was settled in 1630, and the nearer Kingston, the "North End of Plymouth" dates seven years later. Here lived a descendant of William Bradford, and here was kept the Bradford manuscript of Pilgrim history before it began its mysterious journey to England, and its long repose in British archives.

Farther north in Marshfield lived Governor Josiah Winslow, the first American-born ruler of Plymouth Colony, and here his father, Governor Edward Winslow of the *Mayflower*, was married to Susannah White. This was the first marriage in the new colony, being celebrated in 1621. Marshfield also holds the grave of Peregrine White, born upon the *Mayflower* during its sojourn across the Bay in Provincetown Harbor, in 1620.

These settlements in the north were little more than local annexes to the parent group at Plymouth, but soon began a movement down the Cape, which did not reach its goal until Provincetown was incorporated in 1727. From its first permanent settlement, however, the whole Cape was a part of Plymouth Col-

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STANDISH HOUSE AND MONUMENT, DUXBURY

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ony, until in 1792 the latter was absorbed in the royal province of Massachusetts.

In the years just before 1640 movements began in the direction of the Cape. There was discontent with the conditions of living in Plymouth and this led some to think of moving the whole colony to Nauset, the present Eastham. The unwisdom of such a change was discovered in time to avert inevitable failure, "for this place was about fifty miles from hence and at an outside of the country remote from all society, also that it would prove so straight as it would not be competent to receive the whole body, much less be capable of any addition or increase." Thus in old-style phrase is gathered the whole argument, and it is confirmed by seeing how the map of the Cape narrows between Orleans and Wellfleet.

Still the bare-looking fields of this wind-swept plain were esteemed productive in those days, and in 1644 the more restless spirits migrated to Nauset and received a grant of lands there. But these men did not make the first settlement on the Cape. This, as was natural, was accomplished near the base of the Cape with easy approach from Plymouth, within a couple of miles of the new canal, in the town of Sandwich. This oldest town on Cape Cod was settled in 1637. In going from Plymouth we

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now first cross the town of Bourne, but this town is young, having been set off from Sandwich during the last century.

Sandwich, however, though it has to this day people of *Mayflower* blood, was not mainly set up by Plymouth people. Hither came between twenty and thirty settlers from Lynn and Saugus, among them the Freeman family, a name which remains on the Cape both in living representatives and in an honorable fame. Here belongs the author of that great history of Barnstable County which brought the story of the Cape down to the decade following the middle of the last century. Miles Standish and John Alden were the surveyors who established the bounding lines of this old town, whose oldest structure, the Tupper House, is said to go back to the year of the founders, 1637.

The village of Sandwich is about sixteen miles in an air line from the municipality of Plymouth, and if we except the village of Sagamore, which is close to Sandwich, there is not yet a settlement larger than a hamlet in this long stretch of wooded wilderness. But there was time in those days for long walking journeys and a score of miles by a forest trail were not more baffling to the pioneer than is a three-mile tramp to the coddled traveler of to-day.

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The settlement of Barnstable, the county seat of Barnstable County, dates two years from the founding of Sandwich, or 1639. Standish had come into Barnstable Bay, in his search for the lost John Billington in July, 1621, and thus we know that for nearly a score of years, the dunes of Sandy Neck, the green of the great marshes, and the wooded hills that rose to the southward, were familiar to the Plymouth men. Here Standish had met Iyanough, the friendly Indian chief whose name appears in the modern Hyannis, which stands on the shore of the sound, as Barnstable village is on the shore of the Bay. As the Cape narrows going eastward, it came about that Barnstable town reaches across from one water to the other.

Yarmouth in like fashion spans across from Bay to Sound and was contemporary with Barnstable in its beginnings; indeed it preceded Barnstable a few months in the year 1639, in being represented in the General Court. It was the parent town from which Harwich, Chatham, Dennis and Brewster were set off.

The earliest of this quartet of towns to begin a life of its own was Harwich and it was settled, not by emigrants from Yarmouth, but by removals from Plymouth, Eastham and

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other places in 1647, Eastham being then known as Nauset. Harwich did not become a separate town until 1694 and it included what is now Brewster for more than one hundred years from the date of its settlement, not of its incorporation, for we find Brewster a town during the American Revolution. An unwelcome reminder of this to Brewster people is said to be the fact that this was the only town on the Cape that paid a demand of the British, for a large sum of money, in one day collected and paid over to the foe.

The long-used Indian name of Nauset was in 1651 changed by the General Court to Eastham, and until the settling of Harwich in 1694 this was the only town on the Cape below Yarmouth. In 1762, when Eastham had seen more than a century of development, it was the foremost town in Barnstable County, in population, wealth and general importance. Eastham was the parent town of Orleans on the south and of Wellfleet and Truro in the north. Wellfleet was set off in 1763, and given a corporate life of its own, the boundary line between the two towns being established in 1765.

Thus the white man, having passed in the autumn explorations of the *Mayflower* company, from Provincetown around the inner

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shore to Plymouth, was now, as the decades followed each other, creeping down the Cape. Truro, whose Indian name was Pamet, was settled about 1700 and to it in 1705 was given the name of Dangerfield. This designation, appropriate then and as long as sailing ships held the seas, was changed to Truro in 1709.

The first shall be last—might have been spoken of Provincetown and the rest must be added—the last shall be first. So late as 1714, it was merely a precinct of Truro, whose lands even now extend beyond High Head, past the old East Harbor to the very gateway of Provincetown. To-day the long crescent of the Cape's finest harbor has its thousands of people, and Truro has seen her population dwindle to a bare six hundred. The early days did not invite settlement on the sandy tip of the Cape. Whatever the Pilgrims hoped to achieve in the fisheries, their prime desire was to get their living out of the soil. This is the iron rule for a remote and isolated colony. There was no Boston market, no Genesee country, no expanse of prairie, no railway and no highway. Their quest was for soil, water, shelter from storm, and protection from the red man. This they found in Plymouth and then they turned about to see

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where and how they could use the foreland which lay on this ocean side.

Like all the rest of the Cape, the lower end, with its shifting dunes and beaches and the great curving spit that incloses the harbor, was under the control of the Plymouth colony, until all was joined to Massachusetts. Plymouth ruled the early community and for a consideration granted fishing rights to strangers. The lands of even the village of Provincetown were long held by the Colony and then by the State, and not until 1893, were they conveyed by a special statute to the town. The name indicates the original relation to the Plymouth sovereignty. The incorporation as Province Town occured in 1727. While the Colony and Commonwealth were long to own the land on which the very homes stood, there was a measure of compensation in allowing that the peculiar situation of the people should exempt them from taxation and from military service.

No town in the Pilgrim country has nobler hills, more fertile fields, or greater wealth of lovely shoreline, than Falmouth—ancient Falmouth it may be truly called; for in 1660, the first settlers, said to be from Barnstable, came along the shore of Vineyard Sound in boats, and landed on the edge of the outwash plain,

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between Oyster Pond and Fresh Pond. Here they made their first encampment in the edge of flat fields, now dotted with mansions, and luxuriant with the flowers, hedges, lawns and gardens of summer residents. Thus the Falmouth pioneers were quite in the running with the other towns of the upper Cape. If they were a little off the main line of Pilgrim movement, they have well evened the scale to-day, with the thronged highways of the outer shore, the Port of Woods Hole and the ships that never fail the eye on Vineyard Sound.

Here was a peculiar people, singled out from an ancient environment in the pursuit of an ideal, pushing across the seas to a remote and wintry wilderness, not for gain but to set up homes and live on the order of their conviction. They found a peculiar land, unlike in significant matters even the greater part of New England, having its own qualities of soil, its variant mantle of vegetation, its type of climate and exposed to the sea as no other grounds in New England are exposed, excepting only Nantucket and Martha's Vineyard, which are of the same piece and have gone with the Cape in physical unfolding.

The Pilgrim built his house, planted his garden and subdued his field. On this substratum of material support, he set up his

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churches and schools, developed civil government, converted the Indians if he could and fought them if he must. Rarely did he live as much as three miles from the ocean border, his environment was as truly the sea as the land, and he lived, as a distinguished writer of American history has called it, an "amphibious" life.[1]

Gradually the Old Colony man shifted his major activities from the land to the sea, developed fishing and whaling on a large scale and built up, especially on the Cape, many centers of the marine industry, inaugurating a carrying trade that coasted the shores of the Americas, reached across the Atlantic Ocean to the ports of Europe and Africa, and found its remote goals in every great harbor of the antipodes. Truly did a venerable man of Sandwich in the summer that goes before this chronicle tell the writer, that in Singapore, Batavia, Melbourne, and Sidney he found men living that had been bred on Cape Cod.

These sailors and ship's captains that put forth from Barnstable, Yarmouth, Brewster, Dennis, Falmouth, Chatham, Wellfleet, Truro, and Provincetown, learned the wide world, inured themselves to hardship, met the perils of shipwreck and filled the annals of the Cape

[1] Professor Edward Channing of Harvard University.

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with a glory all their own. Those who remained at home tilled the small fields, brought in their cargoes of fish from the Bay, watched for the return of whalers and merchantmen, and went down to the shore to harvest the wealth that was thrown on the strand when unhappy mariners lost their ships in the rough waters of the outer sea.

The sand drifted over their fields, they saw the cliffs melt into the hungry waters, they put their gardens in the valleys and kettle-hole basins to fend off the destroying force of Atlantic gales. They saw the sails on the horizon, they read the signs of the sky. When they had finished looking for their brethren who never came back they set up slabs of slate in their burial yards, recording the names of older and younger men whose bodies were swept on alien shores or resting on the bottom of the sea. Their sun rose in the sea and out on the Cape it set in the sea as well. They were on the land but scarcely of it.

The streams of the Old Colony were few and short and the supply of fuel was precarious as the population grew and the scanty forests went down. There was no fuel in the ground save the peat which could be had only with excessive toil, so they set up windmills and ground their grist by the winds that drove

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their sails on the waters. And when they must salt their fish, they erected vats under the sun and drew these supplies also from the sea.

Thus they breathed the breath of the ocean, found their highway on its surface and their living in its waters or beyond them, paid their good ministers with quintals of fish and with stranded whales, filled their corner shelves with shells and corals and sent the men that the sea did not claim to Lexington and Bunker Hill.

The Cape is not like this to-day. That was the old Cape that Timothy Dwight described more than a hundred years ago, the Cape that Thoreau saw in his fugitive visits of sixty-five and seventy years ago. There was no railway, no wire, no steam service across the Bay—only sand roads and isolation.

To-day, the man of the Cape goes by the Old Colony railroad, though he no longer so names it, and its trains are slow enough not wholly to destroy the repose of old time. There are roads of macadam and tar and thousands of motor cars, summer hotels, shore cottages, refrigerating plants, silted harbors, fishing specialized and localized, overseas trade long dead, wheat and flour and steaks and fuel from the continent lying behind, restricted and specialized agriculture, the artist colony and

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the Portugee—such the Cape. But the sea is there, the surf, the dunes of the shore, the winter gales, the kaleidoscope colors, the sunrise from Spain, and in no small measure, left over for the fourth Pilgrim century, the simple life, the frugality, kindness and honor of the first generation, whose descendants in the eighth, ninth and tenth removes, have passed on and paused in New York, the Mississippi Valley and the Pacific West.

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CHAPTER II

THE ORIGIN OF THE CAPE

IT is a singular fate that Cape Cod, a part of the oldest colony of New England, is hardly better known on its physical side than the coast of Labrador. Vague notions prevail of its surface, its shorelines and its origin. Its rocks and its soils are the victims of observations fantastically untrue, and its relations to the glacial invasion have tripped up many writers, who in their zestful appreciation of the human side of the Cape have desired not to neglect its prehistoric foundations.

Freeman, in the Falmouth chapter of his history of Cape Cod, refers to "A plentiful supply of granite from which exportations are sometimes made." This must have been read by another good minister, who, on the occasion of the two hundredth anniversary of the town of Falmouth prayed—"May its hills which Thou hast made of granite be utilized for improvements and its waters be filled with the tribes of the sea." We may believe that the

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second of these devout petitions was answered, and we may pardon the hazy notions of the geology, as we must those of a later writer who says truly enough of Sandwich that there is plenty of rock in the landscape but proceeds to say also that "it is the backbone of the Cape jutting through." This invites a rather useful observation at the outset. Underneath the soils and glacial drift of many regions of our continent, under the subsoils everywhere, and even under all of the sea floor, is what the geologist knows as bedrock, the more consolidated and compact earth material which makes up most of the earth's crust. There is no bedrock to be seen on the Cape, or on that part of the mainland in Plymouth County from which the Cape springs. It is not to be found in any seacliff, by any lake shore, or in any roadside ledge. There are no stone quarries, and no boring has ever gone deep enough in this region to pierce the loose-textured earth waste and find the solid foundation below it. We may locate Brant Rock, on the south shore of the town of Marshfield; then draw a line southward reaching Buzzards Bay at some point between the villages of Wareham and Onset, and having fixed this line in our minds, we shall find no bedrock east of it in that part of Plymouth County; or

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in the whole of Barnstable County, which is the Cape. The rock is under the surface, but how far under, we do not know. Hard rocks are there in plenty, in surface fragments, in stones little and big, but these recite another story.

Outside of papers of a learned sort, in journals and reports of surveys, nobody has told us where the glaciers were, to which so much is credited, or how big they were, or whither they moved, or how they were the means of accumulating the mass of land waste that we call the Cape.

Here let a devotee of earth science put in a mild protest against further emphasis on certain analogies drawn from parts of the human form. Rather vivid they were when first used by a literary genius, compounding in himself the naturalist and the philosopher, but wearisome and trite after being solemnly quoted and paraded in every book or light essay on the Cape for some fifty years or more. We may learn more, and do the imagination no violence if we find other ways in which to describe the curving shores and the hilly relief of this foreland.

One writer, with painful ingenuity, finds here a "vast curling whiplash," and we are compelled to look at the giant who had

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"whirled it about his head and dropped it into the sea." We can afford, without loss to fancy or poetic feeling, to drop these fantastic and crude ways of picturing geographic forms, which too easily are a screen for our geographic ignorance. When we have put the Cape's end into a class with Rockaway and Sandy Hook, and have followed them in the making, we shall not lose any of nature's idealism if we learn to call them hooked spits, and we shall have gained some real and unforgetable knowledge of that marvelous zone where sea and land meet.

The eastern part of Plymouth County, bordering Cape Cod Bay and reaching across to the head of Buzzards Bay is a piece of country quite like Cape Cod in surface, in soil, in its vegetation, in its physical evolution and in its human story. From this Plymouth belt there springs out into the sea from the vicinity of the Canal, the Cape, southward to Woods Hole, eastward to Chatham, then northward to Provincetown—in all if we follow the general course of the outer shore, a distance of about one hundred miles: if we follow the inner shore, about fifty miles. The Cape is wide on the west, but narrows as we go eastward and still more toward the north, until it offers about the northern end an exposure to

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the sea which is unique on the mainland of the North American continent.

Along the Canal and the eastern shore of Buzzards Bay, Cape Cod is more than twenty miles wide. Such is the span from Cape Cod Bay to the end of Penzance, pointing toward the chain of the Elizabeth Islands. From the town of Barnstable eastward the width is from six to eight miles, though in places the reach from tide to tide is much less. On the northern extension of the Cape, the average is four or five miles northward into Wellfleet, with a drop to two miles at North Truro and less than a mile as we approach the village of Provincetown.

How little such figures tell about the Cape, is revealed by any good map which shows the ins and outs of the shoreline. If we should go over from the head of Bass River, to the nearest tidal run into the Bay, the portage would be little more than a mile long. And if in Truro, we should follow the tidal channel of what by custom is known as the Pamet River, a few steps would take us over a ridge of dune sand to the Atlantic Ocean. Bradford in his history of the Plymouth Plantation recounts the going to the rescue of a British ship in 1627, crossing the Cape by a portage a little more than two miles long from the head of Namskaket Creek in the town of Orleans.

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There is no precise use of language in taking the whole of the venerable County of Barnstable, which is no inconsiderable part of the State of Massachusetts, and calling it a cape. By all the proprieties of geography, it is, and we suppose should be called, a peninsula. But who would have it so? Rather do we yield to the authority of three centuries of use, and call it with the millions who know this as historic ground, by the name, as short as it is simple and full of meaning—Cape Cod.

Back of Plymouth lies a range of hills, which carries the eye southward, with forested slopes and crests, along the Bay shore to the Canal. At the Canal there is a break, but no discontinuance. Crossing the narrow and steep-sided natural valley that now sees the passing of ships, the hills continue southward and also eastward. To the south, the hill belt, three to four miles in width, extends to Woods Hole. Monument Beach, Cataumet, North Falmouth, and West Falmouth, all centers of summer life, lie in its western fringe, where the forests give way and the slopes lead down to the innumerable coves and beaches of the Buzzards Bay shore. Woods Hole is at the southern end and Falmouth on its lovely plain lies at the eastern base of this imposing moraine.

Eastward from the Canal the hills run

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through the northern parts of Sandwich, Barnstable, Yarmouth, Dennis and Brewster, into Orleans, or rather across Orleans to the open sea. This range of uneven upland lies near the Bay shore, leaving room for a string of villages and for farm lands of modest extent, for the north-shore state road, and for the railway as far east as Yarmouth. Yet all this needs to be put a little differently, for most of road and railway is to be found among the northern foothills or near the northern edge of the moraine, for moraine it is, accumulated on the rim of a wide lobe of ice that lay where Cape Cod Bay and Massachusetts Bay now are. At many points the moraine stops where the tide marshes begin and the traveler, eager for every glimpse of the blue waters is tantalized by finding himself lost among scrubby forests.

Hills and mountains are low or high according to their surroundings. Hence Bourne Hill in Sandwich, rising nearly three hundred feet above the sea, is the monarch of the Cape. Then there is Shoot Flying Hill in Barnstable, said to have its name from being a good place to shoot wild fowl as they migrated between the Bay and the Sound. Scargo Hill surmounted by a tower is in Dennis, being another hill of the great moraine and a welcome

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beacon to thousands of sailors bringing their craft from distant seas to the harbors of Barnstable, Yarmouth, Dennis and Brewster.

Higher than any of these is the master elevation of Plymouth, Manomet Hill, the culminating part of the Plymouth moraine, the greatest landmark between the Blue Hills of Milton and the Cape Cod Canal.

If we follow the moraine from Falmouth northward until it bends eastward in Sandwich, we shall find on the inner side a plain, springing from the base of the hills at about two hundred feet above the sea. This plain slopes southward toward Vineyard Sound. As we go eastward into Barnstable the hills are lower, and likewise the northern edge of the plain, which is here about one hundred feet in altitude. A little farther east, at Yarmouth Camp Grounds, the measure is only forty or fifty feet.

The relation of moraine and plain are perfectly seen at the Camp Ground. The cottages are on the northern border of the plain, and directly northward rise the hills, which the railway and the highway cross for a mile or more to Yarmouth Station. Three miles south are Hyannis and the head of Lewis Bay. Everywhere the plain slopes, imperceptibly to the eye, toward Vineyard and Nantucket

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Sounds. In the shoreward belt, where the plain is cut by inlets of the sea, are Falmouth, Cotuit, Centerville, Hyannis and various Yarmouths, Dennises, Harwiches and Chathams, all villages of the south shore.

From Falmouth to Chatham, between the moraine and the sound, lies this gently slanting surface, known to glacialists as an outwash plain. When waters flow out at the lower end of a glacier in a mountain valley they spread their ample load of sands and clays in a narrow belt down the valley. When an ice sheet spreads out on rather even ground, streams come out at many places from under its frontal edge. They grade up the ground in front of the glacier; they change their points of outflow and their courses below the outflow. They run into each other in braided and tangled patterns, but all in all, construct a sloping plain of outwash. This is what happened on the Cape, with ice in Cape Cod Bay and ice in Buzzards Bay—ice that reached far northward and kept pushing southward, and the melting never ceased while the ice endured, and the morainic hills were built and the frontal plain was spread and the upper Cape began to take shape; a shape which is little changed, and its appearance would be little changed, if the mantle of herb and forest were stripped away.

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TRIANGLE POND, IN A KETTLE HOLE, SANDWICH

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Within the outwash plain are the basins of scores of lakes and ponds of various sizes and shapes, with forested shores, sandy beaches and a wealth of natural beauty which in later years has been in process of discovery. In not a few places the plain is pitted with dry depressions, or kettle holes, whose origin is the same as that of the lake basins. Whether a lake is found in such a depression depends on the supply of water and the porosity or open texture of the subsoil. Gathering in a single sentence the forms of the upper part of the Cape—it has a northern section or axis of moraine, and a wide, sloping plain on the south, while on every shore, north, south, east and west, is a fringe of coast marshes and bays and tidal runs.

In the town of Orleans, there begin as we go north, those rather low and dreary levels known as the plains of Nauset in the town of Eastham. The traveler by the railway or in his motor car looks out upon this monotonous and half-desert vista and wonders if he has exhausted the natural scenery of the Cape. And his wonder grows when he is told that Indian corn was formerly raised there for outside trade, and that a couple of decades after the landing of the *Mayflower* people there was a serious project to transplant the whole

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Plymouth colony to this flat and sea-girt ground.

As we approach Wellfleet the surface rises and through Wellfleet to High Head in Truro we find higher and hilly ground, with more forests, plentiful lakes and new surprises at each turn of the ever-winding highway. The physiographer speaks of these grounds as high plains, for he discovers, at altitudes varying from eighty to about one hundred and forty feet, enough harmony in the upper levels to warrant the name of plains. A plodding walker, however, without a relief map or a wide view, would call it very broken and hilly ground.

Here the Cape is higher in the south and east, or on the ocean side, and lower on the west and north, on the Bay side. Into the mass of loose glacial waste the Atlantic, unhindered and powerful, has cut its way and has fashioned here the noblest cliffs on the Cape, cliffs that begin in Orleans, and run northward beyond Highland Light to High Head in Truro. Here the waves of every winter and even the lashings of summer storms work on the cliffs, shift their materials along the shore and out to sea, and slowly move their crest lines westward.

Running across the Cape from east to west,

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in this region of high and broken plains are almost a dozen valleys, a mile or two apart, parallel to each other and having floors that slope toward Cape Cod Bay. One of the deepest and widest of these is threaded by that tidal water known as Pamet River, which heads eastward at Pamet Life Saving Station and Ballston Beach. But for the shoreline bar at that point, topped by dune sands, the Pamet channel would join the Bay to the ocean and set off all the northern stretch of Cape Cod as an island. This valley was the limit of the first excursion of Standish and his company from the *Mayflower* in Provincetown harbor, and marks the first discovery of a supply of corn.

Northward from Pamet are Longnook, a vale of gentle seclusion, not seen by the running tourist, and a little valley that begins on the golf grounds of Highland Light and comes out in the village of North Truro. It is the "Mosquito Hollow" of the golfer, who often has more to do than follow his ball from the sixth to the eighth hole. Southward from Pamet one of the loveliest of these valleys is Cahoon's Hollow east of Wellfleet. It is bordered by pine forests and transparent lakes and through those forests and around those lakes one may pass on hard sand roads, uphill

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and downhill in quiet shades, that seem as remote for the hour as the forest depths of Maine or northern Wisconsin. It is such places that are not seen from cars that whirl over the tar-faced road at thirty miles an hour. The traveler who has rushed along the south shore road, shot down the main artery to Provincetown, and returned to Boston by Brewster, Barnstable and Sandwich—he has done well, but let him not suppose he has seen the Cape.

Some old libraries in New England can produce a time-stained and limp pamphlet of about a dozen pages, by a Member of the Humane Society. The title is "A Description of the Eastern Coast" and the writer was the Reverend James Freeman. Its object was to locate for the shipwrecked sailor, the refuge huts erected by the Humane Society, and in this humble booklet is a careful description of this group of parallel valleys, of the very existence of which modern books and essays about the Cape give no hint. The most southerly channel is Plum Valley in Eastham. It is easy to see why this valley is thus named, and it is a fairly safe guess that most of the others would reveal the shrubby growths, the clustering colors and the wild flavor of the beach plum.

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At High Head in Truro, we drop down to the beaches, marshes and sand dunes of the Provincelands, and let us anticipate our story to say that all below and beyond High Head is the product of forces working after the ice of the glacial period was gone—the creation of currents, waves and winds—ten square miles of fascinating country that is new, according to the geologist's ways of counting age.

High Head is flanked on either side by salt marshes—as they were in the old days—fresh marshes now: for the long beach toward Provincetown, built and almost completed by nature, was finished by man, shutting out the salt water, and furnishing a level track for the railway and the highway, both of which descend from the glacial highlands, at the pumping station near the inner shore. The great dune ridges carry the Cape around to the west, and springing from them is the hooked spit which by its spiral curve forms the harbor of Provincetown.

Going westward across the Bay, Plymouth on its harbor, nestles in the eastern slopes of another great moraine mass, which rises westward and extends southward, inclosing many lakes, and covered with woodland almost unbroken save for the sad-looking trunks and tops of the oaks ravaged by the gypsy moth. Going

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southward the moraine culminates in Manomet Hill, 394 feet, higher by about a hundred feet than any hill on the Cape itself. This great mass, and the high ground reaching southward through the town of Plymouth into Bourne, has been attacked by the waves of the Bay, and the results are seen in the boulder pavements of its beaches and in the cliffs that rise above them.

Edward Hitchcock was the distinguished President of Amherst College. He was also one of the great geologists in the earlier days of that science and about seventy years ago he put forth a report on the geology of Massachusetts, in two quarto volumes. He did not in this classic document venture much about Cape Cod, but he had an open and fertile mind, he had been reading Agassiz and Sir Charles Lyell, and had gained some knowledge of the startling glacial theory with which these men had set Europe thinking. Hitchcock pondered what he had seen on the Cape and put a postscript into his preface, including this remarkable paragraph.

"Is it possible that the whole of Cape Cod is nothing but a vast terminal moraine, produced by a glacier advancing through Massachusetts Bay and scooping out the materials that now form the Cape? In this case the

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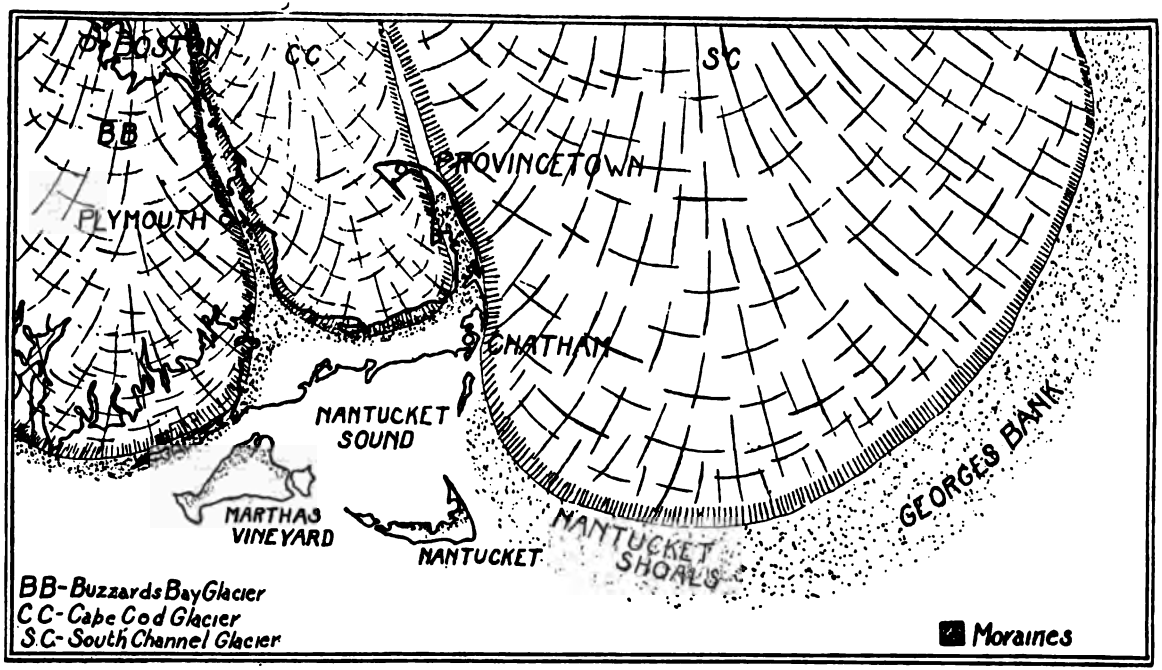

GLACIAL MAP OF CAPE COD REGION

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moraines at Plymouth and Truro would form a part of the lateral moraines, and probably most of Nantucket and Martha's Vineyard might be regarded as moraines of the same glacier, when it extended farther south."

In a time when ice sheets were subjects for confused wonderment, much ignorance and some skepticism, this may almost be called an utterance of genius, for we, with the harvest of a thousand workers gathered in our hand, can ill appreciate the grasp, we might say, the daring of this great observer. It is no special credit to the physiographer of to-day that he is able to go into further explanation and to correct in some particulars the interpretation of Dr. Hitchcock.

Making sure of main facts—the reader probably knows that one of the great centers of ice movement in North America was in the Labrador peninsula, east of Hudson Bay. There centered an ice sheet known to glacial students as the Laurentian or Labrador flow. From that central region moved the ice southward and southwestward into New York, Pennsylvania, Ohio, Indiana and other States. Over New England, the flow, crossing the St. Lawrence Valley, was to the southeast, and the ice was thick enough and powerful enough to push diagonally across the north

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and south mountain ranges of western New England.

In southeastern New England the movement of the ice was more nearly south by southeast. Thus from the highlands of northern and central New England the ice pushed outward into the edge of the sea, or at least into regions that are now covered by the waters of the ocean. From grounds farther north these ice flows passed over Massachusetts, Rhode Island and Connecticut.

So far as is known, the extreme reach of the ice in the south extended to Nantucket, Martha's vineyard, Block Island and Long Island. Terminal moraines have long been recognized as crossing these islands, in the hills of the northern parts of Nantucket and Martha's Vineyard, and in a double series running from east to west on Long Island. And south of each moraine belt of hills, the outwash plains are as evident as they are on Cape Cod. As on the Cape, the surface of the moraines shows fragments great and small, of bed rocks whose place of origin was dozens or hundreds of miles away in New England or in Canada.

When the ice began to melt at its front faster than it advanced, or when as we say, the ice retreated, it by and by assumed new

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frontal lines. These new fronts are likewise indicated by belts of moraine, as in southern Rhode Island, in the chain of the Elizabeth Islands, and in the great moraine which skirts Cape Cod Bay on its south shore, the moraine which runs from Bourne and Sandwich to the ocean side of Orleans.

It is an open question still, whether this retreat stopped on these lines of mainland moraine, or reached much farther north, to be followed by a new advance to the position of the moraine belts. Thus we recognize the fact that the glacial invasion was neither simple, nor of short duration, but was, as has been well shown in recent years, complicated, prolonged, and marked by several great advances of the icy mantle.

For the reader of these pages another bit of explanatory warning may not be without value. When we speak of an ice movement from a remote part of Canada, we do not mean that all the ice came from that center of movement. Throughout the ice period New England had its snowstorms and its moisture-laden air and thus made large contributions to the New England ice sheet. The central push and the direction of flow were in a way fixed in this northern region for reasons not altogether simple and not wholly known. But

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the ice that reached Nantucket or Barnstable County was no doubt mainly a product of New England.

We have referred to glacial ice as sometimes moving in lobate masses. How a "lobe" of ice behaves, it may be well to explain. We may take the basin of Lake Michigan as an example. Without much doubt, pre-glacial time saw a valley, where the lake now is. The ice entered this valley from the north, followed it southward and spread out in it. The central flow kept its way southward, but the side movements turned westward into Wisconsin and eastward into Michigan. Thus the lines of flow were somewhat on the pattern of the lines of a feather, or, to venture a technical word which has the authority of a distinguished scholar, the flow of a lobe of ice is "axi-radiant"—it flows in the direction of an axis, but radiates in right and left directions.

The ice behaved in like fashion as it pushed from the St. Lawrence Valley, through the Champlain and Hudson Valleys. Now apply the notion to Cape Cod Bay. The ice pushed southward to its edge in Sandwich, Barnstable, and the other towns, and it pushed outward and westward in the Duxbury-Plymouth region: and outward and eastward in the region

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of the lower cape from Orleans to High Head in Truro.

On the west of the ice sheet of Cape Cod Bay lay another body of ice known as the Buzzards Bay lobe. Along this belt of territory the retreat from the earlier front on Martha's Vineyard is marked by the Elizabeth Islands, which constitute a moraine parallel to much of the morainic belt on Martha's Vineyard. At that stage the ice moving from far northward still held possession of the surface now covered by the waters of Buzzards Bay.

Now we have two great fanlike bodies of ice lying against each other, along the north and south line of the Plymouth Hills. These hills form a moraine between the two lobes and are therefore an interlobate moraine, a form of which the glacial-hill belts of our North Central States offer many examples. The irregular heaps of material that lie behind Plymouth and south of it, received contributions from the pushing ice and outflowing waters from east and west. Late in the history of such ice lobes the ice ceases to move, or is stagnant, its edges are often covered with rock waste, and when finally the ice melts out, the waste sinks and slides to stable positions, and the tumbled hills of the Plymouth type are evolved.

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May we now go back to the retreat of the glacier from Nantucket to the inner curve of the Cape and see other changes that happened? Much of the older ice that lay on what is now the upper, wide section of the Cape, became stagnant and large blocks were covered by earthy waste brought by outflowing streams from the still existing Cape Cod Bay glacier. Precisely this condition may be followed for many miles on the front part of the Malaspina Glacier in Alaska at the present time. Even forests there grow on glacial waste which in turn is supported by ice. So, on the Cape, these dead and buried blocks of ice in time melted beneath their cover, let down the covering materials and formed the pockets or kettle holes in which nestle the innumerable lakes which dot everywhere the upper Cape.

Now we have brought to a degree of completeness the story of the great plain of the southern part of the Cape, with its forests, its fields of scrub, and its isolated clearings and hamlets. It was built by many changing streams flowing from the glacier of the Bay, and later was pitted by ice-block holes. The ground water filtered in and barring some recent changes of a minor character, the topography was complete, and we behold the marvelous beauty of Mashpee, Santuit, Spec-

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tacle, Triangle and Lawrence, Cotuit, Wequaket, the various "Long" ponds, and of scores of others great and small, with their blue waters, sandy shores and frames of leafy green.

Some streams of glacial waters, flowing down the outwash plain, excavated shallow and flat-floored channels along their lower courses. This is notably true in the southern part of the town of Falmouth, as it is on the southern plains of Martha's Vineyard and Nantucket. The upper reaches of these channels are in some cases followed now by the outlets of lakes, Mashpee River being an example. In other cases these valleys are dry or merely swampy, the flat floors being bordered by steep sides. Into the southern parts of the channels, sea water has entered, making them into marine bays. In a number of instances on the Cape and on the islands these bays have been turned into fresh lakes by the building of shore bars across their openings.[1]

[1] NOTE. At least seven of these valleys ending in bays may be counted from Falmouth Harbor to Menauhant or a little beyond. They are, from west to east, (1) Bowman's Pond, now Falmouth Harbor, leading north by several small ponds to Long Pond, which is deeply recessed, into the Falmouth Moraine; (2) Little Pond, with a dry valley extending about three miles northward; (3) Great Pond, which is tidal about four miles and may be traced to three miles north of Hatchville, or nine miles from Vineyard Sound; (4) Green Pond, with water, tidal marsh, and

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There is a considerable amount of evidence that points to the existence of a vast glacier lying east of the Cape. If any reader is given to the idea that geologists deal much in theory he is likely to be startled by a proposal to invade with ice the Atlantic domain for a hundred miles and more beyond a strip of remote foreland that is already embosomed by the sea. But here are the facts with which we have to deal. We know that the continental glacier scored heavily the shore parts of Maine and moved out for an unknown distance where now is sea. Mount Desert is fifteen hundred feet high, stands on the sea border and was freely overridden by ice. This means a large invasion of the present sea territory on the south. We know also that the land was higher than now, causing wide recession of the sea to the southward.

These facts open possibilities. Over to the southeast of the Cape are those threatening and dangerous Nantucket shoals, which turned back the *Mayflower*, and have for centuries

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dry valley extending in all six miles; (5) Bowers Pond, with a dry valley heading over six miles from the sea; (6) A double-headed channel running north from Menauhant, the eastern arm of the bay heading at Waquoit, then up Child's River to John Pond, seven miles from the sea. These flat-floored valleys are in a number of places strikingly adapted to cranberry culture, having a natural grade and being readily flooded.

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put the shipmaster on his mettle, if they did not lure him to his grave. Farther east, from a hundred to a hundred and forty miles distant, are other reefs and shallow waters, of what is known as St. George's Shoals. There is a story of a ship's crew playing baseball on a shoal bared at low tide. True or false, the yarn serves to fix in the memory this feature of our Atlantic waters. The Nantucket and St. George's Shoals appear much like submerged terminal moraines.

Let the reader now recall those east by west channels in Wellfleet and Truro, to which we have perhaps seemed to give needless emphasis. Their floors descend from east to west. They were made by streams of water. Those streams must have flowed from east to west. They could not have had their sources in the ocean. Whence did they come?

Put all our facts together; or rather—set up a hypothesis and see if it fits the facts. Project a vast ice sheet over Maine, through the Gulf of Maine from Massachusetts to Nova Scotia, and southward. We know the glacier moved far south from the Maine shoreline of to-day. We know wide sea bottoms were then above sea-level. We know that St. George's and Nantucket Shoals may well stand as the terminal accumulations of such an ice sheet.

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And we know that the waters from that sheet as it melted would flow out on the west, in a manner suited to the making of the cross channels on the lower Cape. Perhaps we have gone too far in uncovering the method, being reluctant simply to assert, what on its face, unexplained, might seem an extravagant guess. But it is more than guess, it is a fairly fortified conclusion; and if true it means that the lower Cape, from Orleans or Chatham to Truro is an interlobate moraine between the "South Channel" glacier and the Cape Cod Bay glacier as the Plymouth belt of hills is interlobate between the glaciers of Cape Cod and Buzzards Bays.

It is believed that the smaller lobate ice sheets on the west were the first to melt away. As the retirement of the Buzzards Bay glacier left that region open, the waters from the waning Cape Cod Bay glacier spilled across the base of the Cape and excavated that natural valley which is now followed by the Canal. Later, as the ice in Cape Cod Bay waned, the waters from the South Channel glacier swept across the lower Cape, dug the valleys already described, and shaped the broad plains of Nauset with their wandering outflows.

For the sake of clearness we have kept in

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the background the fact that the glacial history of the Cape is not so simple as it might appear. We have been dealing with what is known to glacialists as the Wisconsin invasion, which was the latest of several great episodes of the glacial period taken as a whole. With greater or less depth these later deposits cover most of the Cape, but below these more recent accumulations, are exposed older beds of clay, sand and gravel, belonging to earlier invasions or to interglacial intervals.

These older deposits are revealed by borings, as for wells; in some of the shore cliffs, and in clay pits, such as are found at the brick yards of West Barnstable. Many visitors have seen these older deposits in the splendid cliffs at Highland Light. Most conspicuous are the massive and tough clays, known there as the Clay Pounds, as they stand carved by wave and rain wash into the spurs and gullies which give to the great amphitheater there such an aspect of wild nature. Below these clays and above the recent sands of the beach, the observant visitor will see basal spurs of coarse gravel, so old that the pebbles are cemented into a conglomerate and rusted with the leaching and oxidation to which the materials have long been subject. It may be well believed, indeed, that the time that passed between the

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deposit of these gravels, and the making of the later moraines of the Cape, was many times longer than the span that brings us from the later ice to the present time.

Few results of the glacial invasion, first and last, have raised so many queries as the erratic masses of rock that are found far from their parent beds. Such drift boulders are conspicuous on many parts of the Cape, especially on the heights and slopes of the morainic ridges. They are common on the great hill belt from Falmouth to Sandwich and from Sandwich to Orleans, and on the inner or northern slopes of the latter section. This is what the glacialist calls the ice-contact, that is the slope that faced the ice as it melted away in retreat.

"Bear-den" patches of great boulders occur in the hill forests of the Beebe estate west of Falmouth village and such a bunching of boulders in Pocasset is locally known as the Devil's Den. Enos rock on the Nauset moraine in Eastham is thirty-four feet long. A boulder ten or twelve feet long lies by the roadside on the right as one approaches Highland Light and from it the adjacent hotel cottage is called "The Rock." From these supplies of the coarser drift must have been taken the granite "for exportation" as described by the annalist of Falmouth. Myriads of smaller

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A. S. Burbank, Photo

GLACIAL BOULDER ON CLARK'S ISLAND

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pieces lie in the gravels everywhere, migrants from the region of the Merrimac, from all northern New England, and from the foundations of eastern Canada.

The shortest journey on the Cape flashes on the eye a vision of blue waters framed in forest green. Back from the ocean, nothing else is so characteristic of the Cape as its lakes, and this is equally true of all of the Old Colony which lies in Plymouth County. Someone has said that one could, in the town of Plymouth, camp by a different lake every night in the year. This can hardly be true, but if county instead of town were named, it could probably be done. The topographic map, drawn with contours for altitude and showing the country on a scale of one inch to the mile, records one hundred and twenty-three lakes in the town of Plymouth and it is quite certain that the topographer missed some of the smaller ponds, hidden as they commonly are, by a complete encirclement of forest.

On the Cape, the same maps show two hundred and seventy natural lakes and ponds. They have the greatest variety in size, shape, depth, in their shore forms, the vegetation of their borders and the life of their waters. One of the largest is Long Pond in Harwich, with a maximum depth of 66 feet and an area

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of more than a square mile. There is no place on Cape Cod, perhaps, which rivals the neighborhood of the Pleasant Lake railway station in revealing the abundance and beauty of these unsalted waters. Let the traveler as he goes north from Harwich station watch for the place where he gets the vistas, losing them all too soon, of Long Pond on the right and Hinkleys and Seymour Ponds on the left, compensating him in a measure for those longer stretches of railway travel in which he is hidden among morainic hills, while he looks in vain for the sea. Indeed we have thought of the Cape as so narrow and wave-beaten, that coming for the first time into it, we are astonished to find that it has an interior and forest spaces that seem as interminable as one might find in any other part of New England.

Another of the greater fresh-waters of the Cape is Great Pond in the town of Barnstable. To add to its attraction, this name has been superseded by Wequaket, which has a family resemblance to many other Indian names on the Cape. Whether a lobster dinner is more to be enjoyed on the shore because of the new name, we do not know. The lake lies in the northern edge of the outwash plain and from its northern shore rise the hills of the great

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moraine where on the north are the Great Marshes of Barnstable.

There is no lake, larger or smaller, which is more beautiful than Mashpee. It is deeply set in the outwash plain and fine forests rise on its borders, save where in two or three places a farmer in early days has cleared the slopes for meadow, or found a low pocket for a cranberry bog. The old Indian town never had many people and has but about three hundred now, and this sparseness of the destructive human animal may explain the seclusion which the lake has preserved. Into the lake from the east runs a wooded promontory which almost cuts it into two waters, and indeed the northern part is known as Wakeby Lake. This promontory is said to belong to the President of Harvard College and there could be no lovelier mingling of water and forest.

Where the highway crosses the outlet stream, an eighth of a mile below the lake, is the Hotel Attaquin, a plain two-story road house, where Grover Cleveland, Joseph Jefferson, and Daniel Webster in his time, found wholesome food, and a decent bed, and much good converse, when they were tempting the bass of the lake and the trout of the neighboring brooks.

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Most of the Cape lakes are shallow, for the depths already recorded are slight for waters that are so large. The smaller Cliff Pond in East Brewster shows a depth of eighty-one feet. The cliffs for which it is named rise more than one hundred feet from some of its shores, and thus show that the ice-block kettle is at least two hundred feet deep, from the bottom of the water to the top of the adjoining upland.

In much the greater number, the lakes are of glacial origin. Some low areas that held lakes at the close of the glacial time now show only bogs, because wash from the surrounding lands and the accumulations of aquatic vegetation have filled the shallow basins of the old time. In other cases, the bays of the larger lakes have been made into separate ponds by the growth of barrier beaches, obstructing shallow passages at the mouth of small arms of the lakes.

A few lakes, particularly back of Provincetown, lie among the sand dunes, and their shallow basins result from the accumulation of sand hills around small areas which escape the sand deluge. Perhaps two or three dozen ponds can be found on the shores of the Cape which were formerly arms of the sea. They have been isolated from the salt water by the growth of spits and barrier beaches. They are

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then replenished year by year by fresh water falling on their surfaces and leaching into them from the adjoining lands, while the original salts are lost to them by equally gradual movements of the ground waters. Oyster Pond, by whose shores the first settlers came to Falmouth, is such a lake, and several bays of the sea border of Falmouth have had a like history. Such changes go on from year to year, and any season may show another bay shut off as a pond, or unstable conditions of alternation may prevail until the cutting off is complete.

The old East Harbor in Truro, near Provincetown, had still withstood the closing process of nature when in the last century man completed the barrier which nature had far advanced in construction, and thus freshened this shallow water which everyone sees on his right, as he approaches the dunes at the door of Provincetown. At the southern end of Monomoy is Powder Hole, once a harbor frequented by ships, now landlocked and welcoming the travelers of the sea no more.

Quite by contraries, a few marine bays on the Cape shore were once occupied by fresh waters. These waters lay in morainic kettles, with a slight and frail barrier of drift separating them from the sea. The waves have re-

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moved the barrier and let in the ocean. No better example can be found than the lovely Quisset Harbor on the Buzzards Bay shore of Falmouth. Stage Harbor and Oyster Pond in Chatham, and Lewis Bay by Hyannis are doubtless in ice-block holes, but may never have been landlocked.

The beauty of the lakes can never be greater than in the past days of wild seclusion, but their usefulness is likely to grow, as the Cape fills and the summer person goes afield for a refuge. They will be increasingly useful as sources of pure water, or of ice when the winters are cold enough to form it, and as reservoirs for power, in the few cases where sufficient altitude and the presence of an outlet stream make this use possible. In not a few places, the lake waters are pumped to flood the cranberry bogs whose grades are higher than those of the lakes.

The irregularities of glacial deposition have not only produced lake basins, but have so impeded drainage as to bring many fresh-water marshes into being. Hence the Old Colony country abounds in boggy areas, with their peculiar groupings of vegetation, and their changing conditions. Such marshes abound in the southern parts of Dennis and Harwich—indeed, in the southern part of the Cape, the

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extent of cranberry culture is a clear index of the frequency of these undrained areas. The physical history has been favorable to the existence of swamps, and the swamps have invited the growing of a certain fruit—such is the chain of physical change and of human activity.

Peat has formed in a large number of the fresh-water marshes, and at the time of the first geological survey of Massachusetts, about seventy years ago, peat was dug in most of the Cape towns eastward and northward from Brewster. That the lower Cape with its scrubby and scanty forest growth would welcome a reserve of native fuel is not open to doubt, but it seems equally clear that for the present at least, the cost of utilizing the peat of the bogs is prohibitive.

Rivers are not a very significant part of nature's machinery in the Old Colony. Around the circuit of the Bay, from Duxbury to Provincetown, the streams are small and few in number, even though they have been given so far as name goes, the status of rivers, presumably by early settlers who got their notion of the size of a river from the country of their birth. But even with them usage was not uniform, for the outlet of Billington Sea, though but a couple of miles long, is a respect-

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able stream, but they called this "very sweet water" Town Brook, and Town Brook it is to this day. However, there was loyalty to England's standards in naming Eel River, which drains Great South Pond and has for these parts the unusual length of five miles. Monumet River drains Great Herring Pond in the south of Plymouth Town into the Canal at Bournedale, formerly into Buzzards Bay.

On the Cape the main streams are the outlets of lakes in the outwash plain. In this group is the stream coming from Connemesset Pond in Falmouth, Mashpee River from Lake Mashpee, Cotuit River carrying the overflow of Santuit Lake, and the outlet of several ponds whose waters turned the ancient wheels of Marston Mills. A little flow of fresh water passes through Sandwich northward. It hardly has a length that can be measured, but it is perennial, its waters form a mill pond which no longer supplies a gristmill but is as lovely as any natural lake, laving the edges of summer plantations and half surrounding the green promontory where sleep the fathers of Cape Cod's oldest town. And it has its fish weir, for on the Cape the herring must never be forgotten. The streams of the outer Cape are hardly more than tidal runs, such as Pamet River at Truro, Herring River at Wellfleet and

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Boat Meadow Creek of Eastham and Orleans. As for the open Atlantic on the east side of the Cape, not a single fresh-water stream enters it, at least not one big enough to put on a map. Few of the lakes have surface outlets, for everywhere the porous subsoil allows a creeping movement of ground water that takes the place of the surface streams in a region of less porous foundations.

Since surface streams are the main instruments by which nature sculptures her land surfaces, and streams play but a small part in the Old Colony, we may safely conclude that the land forms have not much changed since the glacial time, save where the sea has wrought and where the winds have served in a large way as carriers. This means that the country back from the shores is almost as it was, but we shall soon pass on to see how revolutionary have been the changes that have molded and re-fashioned the shorelines of the bays, the sounds and the open sea.

NOTE. Maps of the Old Colony Region. In addition to the ordinary small-scale maps found in atlases, and advertising circulars, the reader who desires more than a cursory acquaintance may consult to great advantage, large-scale government maps. Primary in importance are the topographic sheets of the United States Geological Survey, which have a scale of one inch to the mile, the single sheet representing a quarter of a degree of latitude and a quarter of a degree of longitude. Each sheet therefore shows a territory extending about eighteen miles from north to south

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and about thirteen miles from east to west. The relief is shown by brown contour lines having a twenty-foot interval. The sheets covering the areas described in this volume are:—Duxbury, Plymouth, Falmouth, Barnstable, Chatham, Wellfleet and Provincetown. They may be obtained by sending ten cents each, by Post Office order only, to the Director of the United States Geological Survey, Washington, D. C. They do not take the place of automobile maps for they do not give the character of the roads.

The shores and soundings of adjoining waters are shown in various maps published by the United States Coast Survey, (Washington). These are as follows: Cape Cod Bay, No. 1208; Buzzards Bay, No. 249; Hyannis Harbor, No. 247; Eastern Entrance to Nantucket Sound, No. 250; Provincetown Harbor, No. 341; Wellfleet Harbor, No. 340; Barnstable Harbor, No. 339; Cape Sable to Cape Hatteras, No. 1000. The last shows the location of South Channel and St. George's Bank.

NOTE. The geological reader will welcome a brief view of Professor Woodworth's connotation, giving his generalized section of Cape deposits, from younger to older.

1. Post glacial; Beaches, blown sands, marsh deposits, lake silts, etc.

2. Wisconsin Epoch; Falmouth (Cape Cod) frontal moraine and outwash plain. Nantucket intraglacial deposits, including plains of gravel, till and kames, ice-block holes on south side of Cape Cod.

3. Vineyard Interval (Interglacial Epoch).

4. Manhasset Group.

   Pebbly till at Nauset Head.

   Jacob sands, above blue clay at Highland Light.

5. Gardiner Clay. At Highland Light (Clay Pounds.)

Appears also on the Bay side of Truro, on the shores of Pleasant Bay in Chatham, and in Sandwich and eastward to West Barnstable.

6. Jameco gravel at Highland Light under the Gardiner Clay.

7. Sankaty fossiliferous moraine sands in deep well near Provincetown, and reported in well at Orleans.

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CHAPTER III

THE CHANGING SHORELINE

THE Pilgrim country is all built of frail and destructible materials, while the sea is powerful and always at work. By knowing what the sea is in the habit of doing and by seeing sample pieces of its work going on under our eyes, we can look at a stretch of shore and determine rather closely what it once was and what it will be by and by. And we have a time measure of three hundred years on this shore, during which the white man has been looking at the Cape, making his marks upon it and writing about it.

Eastern Massachusetts, indeed eastern North America, was higher during most of the glacial invasion than it is at the present time and consequently the shoreline was farther out than now. On this broader land, north and eastward from the City of New York, the lobes of the glacier spread out and sent their waters in many channels across the outwash plains. This land with all its roughness of

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rocky hills and tumbling glacial forms has gone down into the water enough to flood the outlying parts of the ancient coastlands.

Into the outwash channels the salt water intruded and thus long, narrow bays like those on the south of Falmouth came into existence. Among the hollows of the moraines, the sea water found its way, and thus turned many hills into islands, and many ridges into peninsulas flanked by straggling bays. Thus are to be explained the present ragged shores of Buzzards Bay.

In exactly the same fashion the eastern shore of the Cape was irregular and broken. It lay out some miles farther east than the present line of cliffs, and has been trimmed back to its present position by the strong waves of the open ocean. The waste thus sliced off from the Cape has been carried to other situations and built into a variety of shore structures which had no existence at the close of the glacial invasion and are now changing so rapidly that the United States Coast Survey must revise its maps at intervals of a few years if they are to be trustworthy guides of the mariner.

On the frail and exposed headlands of the Atlantic side of the Cape, the waves wrought day and night, year by year, and century after

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century. Then as now, the progress was not always the same. Along most of the shoreline the summer waves do not reach the base of the cliffs. But even in midsummer a powerful storm may send the waves at high tide plunging upon the foot of the scarp, and the sands go crumbling into the surf. The slopes are steepened so that the angle of repose is destroyed and thousands of tons of the Cape's substance slide down on the beach to be quickly washed away. Waters and the coarser sands and gravels are swept along the strand.

The waves are not alone in the work. The wash of every rainstorm helps and the winds do their part, catching up the dry sands, sweeping them along the cliffs, or even over their crests and back for some distance on the upland. Recession is going on and the Cape is becoming narrower, even though at a given point little change is seen from year to year. If the cliffs, especially those cut in loose material, were not undercut by the waves, they would become "mature," that is, they would assume less abrupt slopes, and would in time be covered by beach grass and other plants. These cliffs, however, for all the miles from Nauset Harbor to High Head, are steep, and as bare of greenery, as the ever-shifting sands of the beach below them.

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No question is asked more often than this—how fast is the cliff being cut back, and, how long a time will pass before the whole outer Cape is consumed? Mr. Isaac Morton Small lives in a house perched at the top of the cliff at Highland Light. For half a century and more he has watched wind and wave, made the official observations for the Government Weather Bureau, and reported the passing ships to the Chamber of Commerce in Boston. Mr. Small thinks that, during the half-century, the cliffs have receded eighteen inches a year. This has by no means, however, been uniform. After much undermining there was at one time a slip of twenty feet in width, producing an adjusted slope, which remained for a long time. At one point a cesspool overflow was allowed by the lighthouse authorities to discharge over the bank, but the resulting wash was so destructive that this disposal of waste was abandoned. The Government bought ten acres of land for a lighthouse site, from Mr. Small's ancestor, in 1797. Of this area about five acres now remain, and the time is not distant when more land must be acquired and the light set farther inland.

The retreat of the outer rampart of the Cape is no imagining, and the old men of sixty or seventy years ago used to relate that they had

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L. M. Small, Photo

THE CLAY POUNDS, TRURO

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hoed corn where ships then sailed, on the disappearing edge of the town of Truro. An observer of the United States Coast Survey of a generation ago, thought the cliffs of Truro receded eight feet per year and those of Eastham five feet. This estimate is probably too large for any long-time average. It is believed there may have been one third of a mile of retreat in historic time, that is, during the three or four hundred years in which the white man has known something of these shores. This would give us four or five feet a year.

No geologist has told, or can tell, how long a time has passed since the ice retreated from New England. And none can say at what precise date the land took its present stand in relation to sea level. Still one can rather safely affirm that the trimming of the outer Cape has been going on for several thousand years, and that it will require several thousand more to obliterate Truro and Eastham and Orleans. The land may rise, or it may go down, and such change would defer or hasten the end. What we safely get in such problems is an order of magnitude, in other words, the Cape has been losing for more than hundreds of years, and for less than tens of thousands—it falls somewhere in the thousands in the past,

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to shape the long curve of the eastern coast and it will be thousands in the future before the Atlantic waves might roll unhindered against Boston's south shore.

That noble spirit and most keen-witted traveler, President Timothy Dwight of Yale College, writing a hundred years ago, says that the permanence of Province Town had even then been frequently questioned. Where ever Dr. Dwight traveled, he had, for his time, as keen notions of the history of the land forms as he had of the manners and morals of the people, but on the sands of the Cape he is cautious, as well he might be, for many conditions enter in and quite possibly the younger lands of Provincetown will outlast the older and higher stretches of the Cape that lie between Provincetown and Chatham.

The older glacial part of the Cape comes to an end at High Head in the northern part of Truro. All beyond that is a later creation belonging after the glacial time. Go southward thirty miles and look at the hills around Stage Harbor at Chatham. They too are glacial, but the long beaches of Monomoy stretching out for eight miles toward Nantucket are younger. Thus we know what becomes of the trimmings, of the waste shorn off the east coast. It has swept northward

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and southward and formed extensions of the Cape in both directions. The head of the Cape facing the ocean has been cut back and wings, or spits, built right and left, south and north. If we may quote the rather awkward, but somewhat expressive phraseology of a specialist on shorelines, Cape Cod is a "Winged behead-land."

Between High Head and Long Point Light, where one rounds into Provincetown Harbor, are ten square miles of young country built by waves and winds out of the wreckage of the older Cape. Every visitor from Thoreau's day onward, has gotten some notion of the swift movements of Cape Cod beach sands; they roll with the waves, they are off with the winds. A stranded barge is banked speedily with six or eight feet of sand closing around its hull. Lagoons form behind beach ridges and outrushing waters at high tide change the shapes of things in the twinkling of an eye. A wrecked hulk that was buried in one season, stands out stark when next season's outing takes you along the shore.

On all parts of the coast as you go northward, the wave movement comes in obliquely to the strand and the waters and their load work northward steadily and with some speed. A floating object may be thrown in on the beach

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but it is pretty sure to be picked up again and zigzagged northward and westward around the end of the Cape. If one remembers this it is not hard to understand the origin of the Province lands.

High Head is bordered north, east, and west by cliffs cut by the waves when no fending beaches and sand dunes lay as to-day between them and the assaulting sea. Now marshes and lake waters lie around High Head and east and west of these marshes are beaches that border the ocean on the one side and the Bay on the other.

Imagine the waves washing the foot of High Head cliffs. The cutting of the east shore is in progress for many miles southward. The waste moves northward and is carried beyond High Head and built into a long shoal in the direction of the place where Provincetown is now. This submerged bar receives constant additions and begins at length to appear above water at low tide. Then it appears at high tide, the sands dry and the winds lift them and shift them and begin the building of dunes. In some such way was built the first narrow belt of Province lands.

But this is only the beginning of wasting southward and construction northward. The coastline has moved a little farther west and

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the sands now migrate northward on the outer shore of the new belt of beach and dune, form new shoals, leading to new beaches and new dunes, and thus to the widening oceanward of the new strip of land. Several such lines of beach and dune are detectible north and east of Provincetown.

The total result of this action long repeated, is the narrowing of the older Cape as its shore was crowded to the west, and the widening of the Province lands as their shore was developed toward the north and east. Put it another way—for some thousands of years the whole line of shore from Nauset to Provincetown has been slowly swinging on a kind of pivot point located near the present Highland Life Saving Station.

There are other facts which add force to this conclusion. Within a generation salt waters extended up Race Run, beyond the point where the highroad from Provincetown now crosses the valley. This depression has been silted up and thus Race Point is built into solid unity with the dune lands back of Provincetown. And now Peaked Hill Bar is forming out to sea and its shoals have sent many a ship to its doom. It is another stage in the process of building out the wave and dune lands at the expense of the glacial lands

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of Truro, Wellfleet and Eastham. At some future time Peaked Hill Bar will emerge from the sea, there will be another "Race Run" between it and the dunes; that will in its turn fill up, and another strip of land will be added to the newer end of the Cape.

Into New York's lower bay, based on the mainland of New Jersey, Sandy Hook reaches northward past the backwaters of Navesink and Sandy Hook Bay. This little peninsula takes its name from a hook-shaped point that bends around to the west. It is made of the sandy waste that is driven northward and then swung westward in waters propelled by easterly winds. Coney Island and Rockaway Beaches show the same kind of formation, but with them the driving movement was from the east. This kind of form is known to the physiographer as a hooked spit.

The narrow spiral that swings around from the wide dune lands to inclose the harbor of Provincetown is of this nature. As south and east winds have moved the waters and their load northward and westward, so north, northwest and west winds have carried the work of land extension through almost every point of the compass, and the very tip end of the Cape at Long Point Light is pointing northeastward.

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Now go up the shore to the beginnings of Nauset Beach in Eastham and Orleans. Follow the inner shore through the ins and outs of Town Cove, and along all the windings of Pleasant Bay and Chatham Harbor. This was the old outer shore of that part of the Cape and is about as the glacier left it. Outside of the mainlands of the Cape, Nauset beach, capped with dunes, runs for nearly fifteen miles. It is a combination of spit and barrier beach built out of that part of the waste of the Cape which is moving to the south. And there are more than fifteen miles of it, for the long beach of Monomoy, which goes miles south of Chatham, is a continuation of the same formation, corresponding in the south to the Provincetown spit on the north.

The southern point of Monomoy has for many years grown toward the southwest, sometimes as much as one hundred and seventy-five feet a year, but sometimes much more slowly. From the end of Monomoy, shoals extend to Great Point, the northeast extremity of Nantucket. So it would look as if the entrance to Nantucket Sound from the east was narrowing, but it is not likely that this gap of something like eight miles will ever be filled and closed to ships. Great Point is not growing, but has sometimes worn away

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and the narrower the passage becomes the more the passing currents are concentrated and given eroding power. So we need not apprehend the coming of a time when a vessel may not follow the route of three centuries around the Cape.

Many changes have taken place in the Nauset Beaches and their openings since accurate charts were first attempted. Pratt, in his history of Eastham, says that Nauset, the only opening between Race Point, far in the north, and Chatham on the south, was once in Eastham, but has been moving south and is now in the town of Orleans. There is much to show that the openings leading to Chatham have changed during the white man's period. Indeed at the present time Monomoy is a part of the Cape or an island according to the presence or absence of shifting sand. A single storm known as the Minot's Lighthouse gale, broke through Nauset Beach in 1851 and the channel thus made was still eleven feet deep sixteen years later.

Tradition says that there were ancient passages across the Cape, and of one there can be no doubt. It was through a channel in the town of Orleans which is known as Jeremiah's Gutter. It was to this that Captain Bartholomew Gosnold must have referred. He was on

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CLIFFS AND BOULDER BEACH OF MANOMET

A. S. Burbank, Photo

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this coast in 1602, which was the year of his stay on the Elizabeth Islands. He says that Cape Cod, that is, the northern part of what we call the Cape, was an island.

Convincing proof of this is given by a map, prepared as a British naval chart soon after the year 1700. A marginal note on this map records the voyage of a whaleboat, sailing under the governor's orders, to seize the pirate ship *Whido*, which was wrecked in 1717. The captain in command of the whaleboat buried more than a hundred men who had been drowned in the loss of the pirate ship. Six of the pirates, who had been put on board of a seized ship as a prize crew, were captured, tried in Boston and executed for their crimes.

The venerable but alert town clerk of Orleans was good enough to add his informing presence on a visit to this historic channel. About a mile north of Orleans village, on the west side of Town Cove, where Myrick's Point heads into the water, the road crosses a narrow swale. This strip of marsh leads through the fields westward, is crossed by another road, and then by the railroad. From the railroad it is but a short distance to the head of Boat Meadow Creek, a tidal channel which leads through widening marshes, into Cape Cod Bay.

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The channel was from one hundred to a hundred and fifty feet in width and is still bordered in several places by low cliffs of erosion which date from the time when the tidal waters freely pulsed from sea to sea. Mr. Cummings, the town clerk, remembers the period when the marsh was a salt-water swamp. A canal that was dug through a section of the passage in 1812 he remembers as open and clear. The canal was made for the passage of salt boats, thus enabling them to escape the vigilance of British cruisers. As late as 1844, the sea is described as occasionally sweeping through at high tide.

The canal section now shows as sharply distinguished from the marsh on either side by a heavy growth of cat-tail flags. West of the railroad a dike has in recent years been built across the Gutter. But for this dike, modern tides might even yet cross the Cape.

As one pulls into Provincetown Harbor from Boston, imposing cliffs rise on the view to the east and southeast. They are on the shores of Truro and Wellfleet and have been made on the Bay side as the eastern cliffs have been formed on the Atlantic side of the Cape. Here also the wasting sands have been moved both northward and southward. Those shifting northward have been built into the beach

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which now encloses the old East Harbor. The southeastern end of this inclosure is a bog lying under High Head, and is known as Moon Pond Meadow.

There has been a southward drive of waste on the west of Wellfleet Harbor, and its effects are visible as far as Billingsgate Light. If one will consult the Wellfleet section of the United States Geological Survey's map he may observe that Bound Brook Island, Griffin Island, Great Island and Great Beach Hill are not islands at all, though three of them are so named. They are tied to each other and to the mainland at South Truro by small barrier beaches except between Bound Brook and Griffin Islands, where the link is an area of tidal marsh.

About the time of the American Revolution there was published in the *Atlantic Neptune* in London, a map for the use of the British Navy, in which all these lands were shown as real islands. Hence the tying beaches have developed within the past hundred and fifty years. It is said that Billingsgate Island, now the site of a lighthouse, was formerly joined to the land north of it. Another change is shown in the fact that a small crescent-shaped island about a third of a mile south of Billingsgate as shown on the Geological Sur-

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vey map of thirty years ago, does not appear at all on the Coast Survey map of the year 1916.

The waste moving to the southward does not stop with the islands that form the outer border of Wellfleet Harbor, for soundings reveal extensive shoals with the waters varying from seven to sixteen feet, extending into Cape Cod Bay seven to eight miles southwest of Billingsgate Island.

Other shores of the Old Colony are undergoing constant changes, of a less conspicuous nature perhaps than those of the lower and more exposed parts of the Cape. The Coast Survey chart of 1916 warns the sailor that Barnstable Bar is changing and that buoy positions are unreliable. In most respects the shores around Plymouth are about as they were in *Mayflower* times, but the cliffs of Manomet must have receded somewhat even though the Bay waters attack less violently than those of the ocean.

The Plymouth beach has not greatly changed except that it is now bare of trees, an old map showing that it was wooded. Gurnet, a glacial hill, tied to the mainland by the growth of Duxbury Beach before the white man's time, looked to the *Mayflower* mariners no doubt about as it appears to-day to the

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excursionist from Boston, save that it was innocent of lights or houses.

Davis, in his *Ancient Landmarks of Plymouth*, quotes from de Monts's expedition of 1605, Champlain's description, Champlain being an officer under de Monts. He refers to the present Gurnet as "almost an island, covered with wood, principally pines," and then he says, "there are two islets in the harbor which are not seen until one has entered, and around which it is almost entirely dry at low water." Here we have, fifteen years before the sailing of the *Mayflower*, a rather detailed description which proves clearly enough that the beach which now extends from Gurnet to Saquish had not then come into existence, and Clark and Saquish were the two islands lying where Duxbury and Plymouth waters mingle.

The south shore shows no such long and even strand lines as appear on both sides of the lower Cape; it is indeed intermediate in its character between the outer shores and the borders of Buzzards Bay. The waters of the sounds have made considerable progress in forming even curves, by trimming back the headlands and by throwing spits across the openings of the bays. A fine example is seen in the beautiful crescent of the barrier beach which is so attractive to bathers of Centerville

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and Craigsville. Here the inner and older shore was ragged.

Going westward we find the new and outer beaches of Dead Neck and Poponesset, and the cliffs of Succonesset, are results of the building and the trimming which is giving evenness to the shore, and changing into land-locked waters, Great Bay, Osterville Harbor and Poponesset Bay. The new and swiftly developing shores from Waquoit and Menauhant, along the whole series of old bay mouths on the south shore of Falmouth, are illustrations of the same kinds of changes, which are in progress before our very eyes, and involve many temporary shiftings between the status of bay and lake. But we may be sure, if we keep our hands off and our dredges away, that the lake and the fresh water will win in the end, and that the time will come when the whole south shore will form an easy succession of gentle curves melting into one another.

Rather less has been achieved in shoreline evolution on the Buzzards Bay borders. The Bay is narrow, and has a lesser sweep of winds, while the Elizabeth Islands serve as a barrier to prevent the free movement of ocean waves toward the inner shores. Hence we can account for the roughness and immaturity of the shorelines about Woods Hole, about Quisset

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Harbor and all the way north to Wenaumet Neck and Buzzards Bay and around to New Bedford. Nevertheless the observant eye will discern interesting and swift changes going on, in the closing of bays, the silting of shallows, the trimming of shores and the tying of islands. Buzzards Bay, Vineyard and Nantucket Sounds, Cape Cod Bay and the great ocean—it is an ascendant order of efficiency in which the smaller and the greater waters have shaped the lands on their borders.

Thinking of the Cape, it is the winds that have seized the common fancy more than the waves. Though not always remembered, the winds create the waves, even though they blow a thousand miles away and great rollers break on the shore in days of almost perfect calm. The energy is there but it was applied to the ocean surface a long way off.

But not always on the Cape is it a long way off. There are southeasters and northeasters, and if not these, westerlies and southwesterlies. And sometimes a gale is so strong that you lie down on the wind, lest you be tossed over the sea cliff or driven down the slopes of a glacial kettle hole.

When one has seen the Cape as it is, he knows how small a part consists of deserts of wind-driven sand. Where the Cape is not

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farm and field, it is forest and scrub, or moorland, with mosses, patches of resilient mesh of wild cranberry and clumps of bayberry, blueberry and beach plum. The wind however is always at work, sometimes on exposed bits of light, glacial soil in the interior, and in no trivial measure on the bare faces of the sea cliffs. It rushed up these slopes or along them, removing loose material, and has on the east coast in many places, built sand hills at their crests on the great foundation of glacial deposits. These are, nevertheless, the lesser works of the winds.

The real fields of sand dunes are in the Province lands beyond High Head, and extending from the crescent of Provincetown northward to the open sea; down the long stretches of Nauset and Monomoy, embracing half the outer length of the Cape, and for miles on Sandy Neck, between Cape Cod Bay and the great marshes of Barnstable. Minor stretches of sand dune run out from Town Neck in Sandwich, on the Falmouth beaches, and on various other Cape Cod shores as well as on the long barrier beaches of Plymouth and Duxbury. Of greatest extent and interest are the dune fields of the Province lands, for here the winds and the waves have been wholly and alone responsible for reclaiming from the

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FORESTED DUNES AND THE PROVINCETOWN MONUMENT

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ocean the ten square miles of the Cape that lie beyond High Head in Truro.

We have followed the currents as they shifted the sands of the east shore northward and westward to form the great hooked spit that incloses the harbor of Provincetown. First a shoal develops, then emerges a beach, and the sand quickly drying under sun and wind is picked up and thrown into heaps. Thus barrier beaches become dune belts and when such barriers are joined to the land, as in the filling of Race Run, the migrating sands retreat upon the adjoining grounds that lie inshore.

At first on the tip of the Cape, there were no adjoining lands and we may picture a single curving beach ridge thrown out beyond the older glacial foreland, with dune hills like those of Nauset or Sandy Neck at the present time. But successive bars and developing beaches were built outside of the southern and primitive beach, and by those various growths, the outer cape, which is narrow at East Harbor, has attained a width of three miles, where the State road now crosses it from Provincetown to the life saving station. The entire three miles are in dune country, first through the gardens in the hollows back of the village, then winding through a forest, then a mile of

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sands, bare and glistening save for clumps of beach grass and some small pine trees planted by the hand of man.

Within the dunes are a number of lakes, lying in unfilled depressions among the sand hills —Shank Painter, Duck, Round, Pasture and Clapps Ponds. This great dune field invites a view from the top of the Pilgrim Monument, whose foundation, a hundred feet above the sea, is sunk in the top of a leveled sand hill.

If one brooks at the climb, let him go aside from the road as he crosses to the sea, on a hilltop a mile from the ocean. The perch is to the right of the roadway and a few feet higher. Toward the sea is Race Run and beyond it the outer range of dunes. The lookout is over Sahara—with an adjoining oasis of forest. In the strong light, the green against the gray, and the blue sea beyond, in the shifting forms, in the atmosphere of a wilderness of a unique kind, the lover of inland scenery may find a fresh sensation, and one may understand how large is the sand world in the lure that brings the painter and the would-be painter to his summer lingering in ancient Provincetown.

The everlastingness of hills does very well as a poetic symbol of permanence, but to the student of the earth even rock-bedded hills and

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granite mountains are passing away. A sand hill however is a thing of overnight, physiographically speaking. There is not much to hold the sand grains of a dune together, and they migrate about as freely as the falling leaves in October winds.

Look at a sand hill during a high wind and see the attack on the exposed slope, where the wind picks up the grains, whirls them over the crest of the hill and drops them to rest on the lee side. Thus one slope fades and the other advances, and bit by bit the whole hill shifts its center, until in time the old ground is left and new ground occupied.

There are endless changes of form also. Even if the dune be covered with beach grass or scrub, the wind may attack a single exposed patch, blow out the sand, deepen the hole, enlarge its borders, removing the core of the hill and almost giving the blowhole and its rim the semblance of a volcanic cone with its crater. Here and there a clump of vegetation binds a central piece of the hill fast and the wind removes all the flowing fringe or base, giving the core or remnant abnormal steepness under its protective cap of gnarled roots or still living green. Such eccentricities of sand-hill evolution attract the artist colony, and fix themselves on many canvases.

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In deserts and strand lands centuries have seen the ofttimes painful efforts of men to fend off their enemy, the migrating sands. One may see the struggle on the Mediterranean borders of ancient Philistia, on the edges of Saharan oases, on the shores of France, Britain or the Low Countries, on the banks of the Columbia River, and, for at least two hundred years, in the outer parts of Cape Cod.

On the French coast and elsewhere, stake and brush fences are carried along the crest of a dune, that the sands may lodge in and beyond them. When the fence is engulfed another is erected above it, until after sufficient upward building, the winds fail to carry the sand over and a barrier dune has come into being which protects the inland fields from invasion.

This method has never been used on the Cape, where the more widespread method prevails of supplementing nature's protective efforts, by preserving natural vegetation and by artificial plantings of grasses and trees. Readers of Thoreau recall his playful imaginings about tying up the Cape to its moorings, and they remember his references to the warning-out of the townsmen in the spring to plant beach grass in exposed situations.

Fewer than the readers of Thoreau's classic

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DUNES OF SANDY NECK

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sketches are those who know that one of the objects of the agricultural explorers sent out all over the world from Washington has been to find sand-binding grasses, which would avail to hold dunes in place for the salvation of harbors and cultivated lands. The dangers of sand shifting have long been recognized on Cape Cod and the great fear was that the sands might invade the harbor of Provincetown and thus destroy one of the most important havens on the New England coast.

The force of the winter storms is little realized by the summer inhabitants. A single storm may dash the sands so effectively on windows close to the shore that their transparency is destroyed. At the Highland Life Saving Station, the life guards say that they have covered a pane of glass with a stencil, and have seen letters well etched in a storm blowing for three hours. Sand grains as large as grains of wheat have been freely swept up from the beaches and deposited on the dunes, wind velocities of fifty to seventy miles an hour being not uncommon.

Most of the dune lands belong to the State and are therefore open to public measures to secure their stability and to protect the harbor. The sovereignty of the State or the national government has extended through a

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period of more than two hundred years, and beach grass has by public authority been planted for much more than a century.

The forests that exist on the end of the Cape and the more extensive woods that are thought to have stood here when the Pilgrims came, have provided a natural means of holding the sands and keeping the hills from migrating, but the removal of trees on this and other parts of the Cape, has opened new areas to the onslaught of the winds. The plantings carried on for several generations have in some measure atoned for the interrupted work of nature.

The beach grass is the most important of the sand-binding plants. It sends up its tall stems and the freshly blowing sands lodge in the grassy thicket. Into these new sands the stems send out new roots while the lower and older roots die. Thus the growth maintains itself at higher levels with the upgrowth of the hill, and the mesh of roots and stalks holds the sands from blowing away.

Other plants useful on the dunes are the beach pea, the goldenrod, sand wormwood, bayberry shrubs, wild roses and beach plums. All these are either herbs or low shrubs and when they have developed a soil, trees may come in and possess the ground, especially

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pitch pines and oaks, with a few beeches, birches, and maples in some places. Huckleberry and blueberry bushes also help to fill in the spaces in these forests and the cranberry and other bog plants get a foothold in the moist places.

The greater extension of the old forests is shown by forest materials which have been revealed in places where the anciently invading sand has been blown away, and stumps have been seen at low tide near Wood End Lighthouse, where no fragment of living forest exists to-day. One investigator thinks three fourths of the bare sand surfaces of to-day were forested in historic times, and we may recall that Champlain's map of Plymouth and its harbor shows trees on the Plymouth barrier beach in front of the present town and harbor. Not only the cutting of trees for shipbuilding as well as for fuel, but the pasturing of stock was responsible for the modern exposure of the sands to removal. And fires have also played their part, both here and on many other parts of the Cape, finding ready fuel in the pitch pines and dead undergrowth. The salt factories which were planted in all parts of the Cape, made for some decades heavy demands on the fuel supply, until the processes of solar evaporation replaced artificial heat.

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The growth of Provincetown led to the destruction of the trees and beach grass within the narrow coastal strip on which the village is planted. Many houses were erected on piles that the sand might pass under them and not engulf them, the use of the public road kept the sands exposed and the goal of all these loose materials was deposition in the harbor.

Legislation has been enacted at intervals from a date as remote as 1703. It was sought to stop the boxing of pine trees for turpentine, to restrict the pasturing of cattle and to prevent the cutting of any trees within a half-mile of the shore. Determined efforts were made by the State of Massachusetts in 1825, and other restrictive measures were taken at intervals of a few years throughout the last century. Thus a "beach grass committee" for planting was an institution of Provincetown from 1838 to 1893. In the last-named year the municipality was granted possession and control of the lands on which the town stands, all the rest remaining as to-day, the possession of the Commonwealth, bearing the name of the Province lands. Much beach grass has from time to time been planted and similar measures were long taken by the adjoining town of Truro, to protect its exposed areas.

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About the middle of the last century the sea broke through the outer beach that defended East Harbor and it was felt that the main harbor was in danger. From that time the planting was actively carried on by town authorities, by the State and the nation. In 1903, the general government had spent more than one hundred and fifty thousand dollars to protect Provincetown Harbor, and one item of this outlay was for the planting of beach grass. It was found about twenty-five years ago that the exposed sands of the outer dunes north of the forest area were invading the forest at the rate of fifteen feet per year, thus threatening in no distant time town and harbor. Hence the plantings which the visitor may now see as he passes out beyond the forest-zone toward the ocean border.

These plantings consist of beach grass and pine seedlings and in some areas these have been supplemented by the laying down of brush covers, which retain the sands of exposed crests until the vegetation has secured its hold. Similar plantations of beach grass have been made in other dune areas of the United States, as on the shores of Lake Michigan, and on certain Oregon and North Carolina beaches.

All this represents a form of private and public activity altogether strange to most peo-

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ple who live at long distances from sea or lake, and it is one phase of the environment of the sea, and one example of what the sea compels men to do, who live by the ocean and must conform their lives to its activities.

In the report of the Trustees of Public Reservations, giving, in 1893, the results of an investigation in 1892, a curious fact is stated—that while the soil in the vegetation areas of the Province lands is nowhere more than three or four inches deep, "the underlying sand is wonderfully retentive of moisture, so that this particular terminus of the Cape presents in its uninjured parts a more verdurous landscape than the main body of the outer Cape can show."

Timothy Dwight, after a keenly vivid and picturesque description of the sandy wilderness of Provincetown, explains at length the growth of the beach grass, the planting in rows with alternate spacing, or breaking of joints against the wind, and then as was not uncommon with him, improves the occasion by a soliloquy of admiration for the divine ordering which had arranged to put this plant in this particular place. It is not here lightly quoted, for be it remembered, Dwight was interpreting the arrangements of nature after the manner of Paley and not of Darwin. A

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THE WIND MAKES CIRCLES WITH DROOPING BEACH GRASS

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half-century was to pass before the *Origin of Species* would come off the press, and the progressive adaptation of growing things to environment was perforce undreamed of by the Yale theologian. His pre-Darwinian satisfaction must not be lost to any reader of Cape lore. "The wisdom and goodness of the Creator, exhibited in the formation of this plant, in this place, certainly claim the admiration and gratitude of man. But for this single, unsightly vegetable, the slender barrier, which here has so long resisted the ravages of the ocean, had, not improbably, been long since washed away. In the ruins, Province Town and its most useful harbor, must have been lost . . . . No other plant grows on this sand. The purpose for which it seems to have been created, it answers easily, permanently and perfectly."

One can hardly share the verdict that this is an "unsightly vegetable," having beheld in every phase of sun and shadow its marvelous, gray green tone, or having stood to admire on the sand, the circles, true as compass ever struck, made by leaves of beach grass, with drooping tips driven round and round by ocean winds.

Outside of shore areas, and on the greater body of glacial lands which form the bulk of

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the Cape, the winds have no widespread effects in the movement of earth materials. This is quite contrary to popular opinion, which to-day persists in looking upon all Cape Cod hills as sand dunes, and has slightly if at all outgrown the belief, expressed long ago in Mitchell's *View of the United States* that the Cape "consists chiefly of hills of white sand mostly destitute of vegetation."

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CHAPTER IV

OLD COLONY NAMES AND TOWNS

In a brilliant August morning by the shaded grave of Joseph Jefferson, a summer visitant met by chance, spoke of those who were "sympathetic with the Cape." If she had been anywhere else in Massachusetts, and had said "the Cape," there could have been no mistake and no one would have thought she intended Cape Ann or Cape Elizabeth. What the gentle lady meant by "sympathetic," is not easy to define, but it is not difficult to know.

No name of royalty clings to this best-known and best-loved of New England forelands, though Captain John Smith tried to make it Cape James. Those who have the quality of sympathy are glad that here is no Wonder-strands of the Norse, no Cap Blanc of Champlain, or New Holland of Henry Hudson. Gosnold at first sought to fasten Shoal Hope upon the Cape, but had a better thought, and from him it gained the plain and

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worthy name which may last as long as the waves wash its sandy shores.

John Smith had a keener sense when he gave to the great region whose shores he explored and mapped the name New England, for in surface, climate and shoreline, as well as in the industries and principles of its people, the new country compares in manifold ways with the old. With all suitableness therefore, the map of New England is sprinkled everywhere with English names. They are spread in a sort of historical layer over the older deposit of Indian designations.

This overlapping stratification of names is carried far in New York. Witness the Dutch wave of migration in the Hudson and lower Mohawk valleys, the Palatine German on the upper Mohawk, and the English names coming by way of New England to central, western and northern New York. The Empire State goes far also in the appropriation of the names of early federal and local statesmen.

The Old Colony, in contrast, got its outfit of names before there were any federal statesmen and the early comers did not so freely as in New York burden the towns and villages with family or first-settler names, with the suffix *ville*. Nor did the Old Colony catch a shower of Romes, Scipios, Uticas, Ithacas and

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other classic cognomens. Mainly therefore, on the Cape and around Plymouth, we find Indian and English names with here and there a memorial of some name of honor in the church or in civil life.

In the roll of towns, English adoptions are far in the majority. Off the Cape we have Duxbury, Kingston, Plymouth, Halifax, Wareham and Middleboro. One would not like to think of Plymouth as Saint John Harbor, Port of Cape St. Louis, or Crane Bay.

On the Cape are the English place names, Sandwich, Falmouth, Barnstable, Yarmouth, Harwich, Eastham and Truro. Barnstable gets its name from Barnstable, a market town of Devonshire. The latter is on a small navigable river a few miles from the sea and is thought to be the port from which some early settlers in the Cape town sailed. Regarding Yarmouth, Swift, its historian, thinks the town may have been named from old Yarmouth of England, not because any group of colonists came from it, but because it was known to the settlers as the chief English port for Holland.

The elder Truro is a very ancient city, not far from Falmouth in Cornwall. The Cape Truro was first Pamet, then Dangerfield, and became Truro in 1709. The historian of the

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town, though his studies produced a large volume, does not appear to have found the connection, if any, between the old town and the Cape Truro.

Chatham bears its name in honor of William Pitt, the Earl of Chatham. The newcomer on the Cape learns after a time not to scant the second syllable, but to pronounce with the accent about equally distributed and the vowel brought out in both parts—*Chat-ham*—the same usage applying to Eastham. Some old Cape people seem to hit the second syllable a little harder than the first, but on the other hand, the trainmen, who may not be natives, are likely to call—*Chatum*.

In aboriginal days, the region of Falmouth was Succanesset, Yarmouth was Nobscusset, Chatham was Monamoyick and Eastham was Nauset. Mashpee is the only Indian name which has been retained by a town on the Cape. Three towns do honor, in their names, to early settlers. One of these is the first town to be crossed as we go upon the Cape, the youngest member of the family in Barnstable County, the town of Bourne. An ancient and honorable family went to the Old Testament and called various of its offspring, Jonathan, Bathsheba and Shearjashub, but the town name was given in special honor of the saintly

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friend of the Indians, Richard Bourne. Dennis recalls the Reverend Josiah Dennis, for thirty-seven years minister; and Brewster carries down the name of Elder William Brewster of Scrooby, Leyden and Plymouth.

Provincetown is the Town of the Province lands. The name of Wellfleet is traced, perhaps conjecturally, to *Whale fleet*, and Orleans is the only town in the county which has what may be called an alien designation. It was the good fame of the democratic Duke of Orleans, which, in 1797, when the town was set off from Eastham, led to the choice of the name. A part of Wellfleet is said to have acquired the name Billingsgate, because of the planting of oysters in the neighborhood. It was not altogether fanciful to adopt the name of the great fish market of London. It still appears on the map attached to the island and the light at the outer opening of the harbor.

Most of the towns have in addition to their principal village, their satellite Easts and Wests, Norths and Souths, but they are not located so far as one can see, with much regard to the points of the compass, at least in several of the towns. Other village names show a good deal of variety in their origin. Indian names abound in Bourne and Falmouth, as Pocasset, Cataumet and Waquoit.

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The Indian chief, whose name is variously spelled, and may be something like Iyanough, comes out in two village names of the town of Barnstable as Wianno and Hyannis.

Marston's Mills adds one to the list of old settlers' names and some villages have descriptive designations, as in Forest Dale in Sandwich and Osterville—Oysterville—in Barnstable. According to Freeman, Grand Island was once Oyster Island and the settlement was Oyster Island village. A flag-bordered lakelet in North Truro gave to this snug village the early name of Pondsville. A hole, being a short word for a narrow passage swept by runs of the tide, gives us appropriately a name for one of the Cape's frequented harbor villages, Woods Hole.

Unless we except shore forms no natural features put such a profuse assortment of names on the map as the lakes and ponds. Many names are derived from their size and shape. In Great South Pond in Plymouth we find recorded both size and position. There is also Great Pond in Barnstable, known now to the tourist, more takingly perhaps, as Wequaket. Eastham and Wellfleet each has its Great Pond. The name Long Pond solved the naming problem in all parts of the Old Colony. Plymouth has its example, likewise Falmouth,

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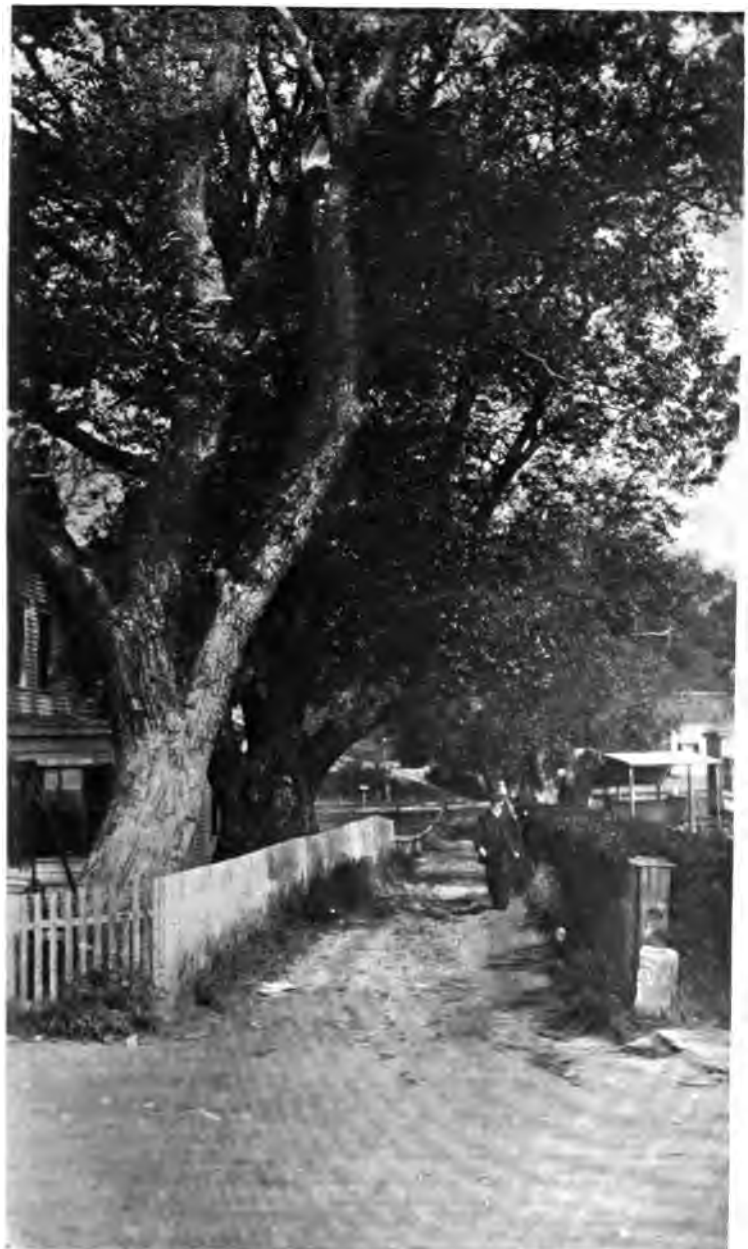

A PROVINCETOWN ALLEY

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drawing its water supply from the lake that stretches its waters and its bordering slopes far back into the great Falmouth moraine. The Long Pond which is the largest fresh water on the Cape lies between Brewster and Harwich. Wellfleet has two Long Ponds, though neither deserves the name, and Barnstable, Bourne and Yarmouth have each one.

A triple group of beautiful kettle-hole waters gives us Triangle, from its shape, Lawrence, from an old family, and Spectacle Pond, a descriptive name. Falmouth also has a Spectacle Pond. One of the Wellfleet Long Ponds is grouped with five others showing a sufficient assortment of naming motives—Gull, Higgins, Herring, Newcomb, and Round Ponds.

Herring ponds, drained each by a Herring River, we find in Wellfleet and Eastham. Harwich has its Herring River, and Monumet River in Bourne drains Great and Little Herring Ponds in Plymouth. Eel River in the latter town recalls one safeguard of the *Mayflower* people, who could, if need be, save themselves from starvation by the suggested kind of fishing.

Remembering the hundreds of lakes little and large within the Old Colony there is no need for wonder that the vocabulary of the pioneers was sometimes taxed, that names

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were duplicated and that some are highly fanciful. The marsh at the border, the water, transparent or turbid, the bird that flew over, the lily pad on the surface, the oyster in the landlocked bay—all offered themselves to the settler or the surveyor and he placed them in his memory or on his map. If resources failed, he could call a water great, or long, or round when it was none of these, or fall back upon Lawrence, or Jenkins, Hinckley, Wakeby, Lewis or Shiverick. The Cape has at least four Flax Ponds, three of them inside a five-mile radius.

Remembering Oneida, Seneca, Cayuga, and Canandaigua of the New York lakes, or listening to gently flowing waters in Genesee, Susquehanna, Chenango, and Unadilla, the waters of the Old Colony are poor in Indian names though we do find Cotuit, Santuit, Mashpee, Ashumet and Coonemossett. If we go to the shore features, the Indian heritage is larger—Saquish, Manomet, Scusset, Nobscusset, Namskaket, Pamet, Monomoy, Quamquisset, Cataumet and Wenaumet.

Shoot Flying Hill is now no doubt more sought for views of Bay and Sound, than for the destruction of migrant wild fowl. *Clay Pounds*, used sometimes of the recessed cliffs by Highland Light, has been interpreted as

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derived from the pounding of wrecks upon the hard sea banks, but this sounds rather mythical and sends the curious on further inquiry. Not many hills have received a name; but a few have become landmarks—Manomet and Telegraph Hill in Plymouth, Bourne's Hill in Sandwich, German's Hill in Yarmouth and Scargo Hill in Dennis.

Old Colony life planted itself on the sea-border and there it has remained. South of Marshfield are Duxbury, Kingston, and Plymouth, all reached by the tides. From Plymouth along the shore to Sagamore, the country is a wilderness, holding a few ancient cottages and invaded here and there by summer folk. All the back part of Plymouth Town, save for scattered hamlets and cranberry bogs, is forest country.

The upper Cape has a fringe of settlements on all its shores. We go by easy reaches from Sagamore to Sandwich and West Barnstable and then there is an almost continuous village from Barnstable through Yarmouth Port, Yarmouth and Dennis to Brewster. The Buzzards Bay shore has an unbroken panorama of villages and cottage grounds, from Buzzards Bay to Woods Hole, and a score of villages line the south shore, for forty miles from Woods Hole to Chatham. More commonly the latter are

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not directly on outer shores, but at the inner end of tidal bays as at East Falmouth, Waquoit, Marston's Mills, and Hyannis. There is scarcely a break in the long grouping of summer homes and village streets, from Osterville to Chatham.

Between the Bay chain of settlements and these on the Sound, is a wilderness which includes the summits and south slopes of the great moraine and the wide inner belt of the outwash plain. One drives from Falmouth to Sandwich through more than a dozen miles of almost unbroken forest. Here are the oaks and pines framing in the lakes, a country that is now invaded more and more by the Portuguese gardener, the farms of a few opulent agriculturists and the homes and camps of those who feel no compelling bent toward salt water.

On the lower Cape the villages are either in the interior or on the shores of Cape Cod Bay. There is escape from the severity of oceanic storms but in no case is there a separation from tidal waters. Orleans is on Town Cove, but is nearer to the Bay than to the ocean. Wellfleet at the head of its spacious harbor waters, is midway between the Bay and the Atlantic. The Truros open to the west shore and Provincetown is on the protected inner strand.

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Chatham is the only village on the ocean side of the Cape. From Chatham to Provincetown, a distance of more than forty miles following the beach, the shore wilderness is broken only by lights, life-guard stations and a few summer cottages. One could follow Thoreau's track from Nauset northward, and only at intervals of several miles find interrupted the solitudes which he describes.

Every village, after the manner of Plymouth, will yield reasons why a particular site was early chosen as a center of homes. Settlers want a decently good soil, they want water, and trees and protection from storms. And in a maritime neighborhood, they want the easiest access to the sea. Thus Sandwich grew by a small stream, whose water invited the herring and turned the first millwheel on Cape Cod. This stream flows down through a snug recess in the northern border of the moraine. The homes are among the hills and the business part reached down to the old harbor in the marshes. The comely old homes, once deeply secluded now bordered by the busy highway from Boston, stand pocketed between the main masses of the moraine on the south, and ridges of recessional moraine that rise steeply at the north.

The villages of Barnstable, Yarmouth Port

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and Yarmouth are on the borders of Barnstable Bay, and their sites were no doubt chosen for harbor protection, favorable conditions for fishing and clamming, soils better than the average on the Cape, and for those seemingly endless stretches of the Great Marshes, which in old times supplied large gatherings of salt hay. The Brewsters and the northern Dennises stand within easy distances of the north shore on the route which must always have been traced in going down the Cape from Plymouth or Boston.

The compelling condition of concentration at Woods Hole is its harborage. Always open to whalers and fishermen, it is the natural calling point between New Bedford and the outer islands, and in these days of the railway and the motor car, it transfers a multitude between land and sea during the summer period, and has charms of its own, waters, passing ships, the views of the Vineyard shore, and backgrounds of glorious hill and forest.

Across these hills and on the other side of the forest is Falmouth. The early settlers landing between Oyster and Fresh Ponds, went about a mile back from the shore and built their permanent homes on the fertile plain at the eastern base of the moraine. At the railway station one is at the foot of the

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PLYMOUTH, LEYDEN STREET TO-DAY

A. S. Burbank, Photo

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morainic hills and on the western edge of the plain. From the main street one may go through a churchyard and find himself at the edge of Fresh Pond, looking toward the sea. On the other side, in the rear of the post office, is another charming fresh water, lying also behind the Town Hall and on the edge of the lawns where the Public Library stands. It took no special wisdom to locate Falmouth—the men of 1660 followed the index finger of nature.

Cotuit, Hyannis, Chatham, and indeed all the south-shore villages are on the borders of protected waters, inviting fishing and trade in the old days and open to summer homes and summer sailing in these times. In the shallow bays, oystering, clamming, and scalloping, if they do not make many rich, at least save the traditions of old time, and avert from the summer world the unthinkable loss of chowders, steamed clams, and broiled lobster.

If one enters Nauset Harbor and makes a right-angle turn into Town Cove, he will arrive, after sailing about five miles, at the head of the Cove and find straggling about this end shore the village of Orleans. The town borders both bay and ocean, but the village is more secluded from the ocean than any of its sister communities on the Cape. Like Fal-

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mouth, it is one of those sites which need no explanation, but for the simple fact that the greater part, in the realm of geography at least, see but do not perceive.

The straggling little Truro is about equally distant from the inner and outer shores, in the well-shielded Pamet valley, setting its churches, however, in utterly exposed places on the high hills. One can hardly think these windy hilltops were chosen to compel walking exercise on Sunday morning, for dearth of exercise in the older days of the Cape is unimaginable. The churches were beacons, perhaps as an afterthought, and possibly were perched high to be as near heaven as was possible.

North Truro, however, planted its churches like its homes, in a valley. Here valleys join and the snug little place is in a kind of bowl, not far from the Bay shore, bordering the small pond, from which, as we suppose, it was once known as Pond Village.

Going down the Cape one passes the great shops and new-looking houses of Sagamore, and if he is making his first exploration he is wondering what can lie behind so prosaic a doorway, if he has come all this way for forges, chimneys, sidings jammed with newly completed freight cars, and dreary wastes spread

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with dredgings from the Canal and still staring verdureless at the traveler. In a few minutes he finds himself in ancient Sandwich, and what he thinks of that old town will hinge upon the mode of his going. Two visions were never so opposite as those that greet the eye through the Pullman window, and in the motor car.

At the railroad end of Sandwich, round brick smokestacks of huge size rise over the ancient glass factory. The walls are falling out in places, and one part of the decaying structure does duty as a storage place for fish. Beyond the ruins are yards full of rubbish, and tall with weeds, stretching down to a channel, an empty trench between walls of mud at low tide, leading its sinuous way across wide salt marshes, and past a ridge of dunes to the waters of the Bay. In the environs are small dwellings, some of them rejuvenated after long dilapidation and occupied by populous families of Italians, whose men folk go every day to work in the shops of Sagamore.

The real New England town, of mansions and white paint, of churches and homes, of the town hall and the public monuments, gathers at the foot of the mill pond and along the state road both east and west. Here under shade so densely arched as to be almost twilight,

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live the descendants of the ancient settlers, in an atmosphere of repose which seems hardly disturbed by the cars that ceaselessly pass in the summer months. In the winter, silence is pretty well maintained in Sandwich, save when an occasional Old Colony train rumbles by or a steam whistle shrieks on the Bay or along the Canal.

How general it is in New England, we do not know, but on the Cape, if a query takes one to the town hall, there will almost certainly be found one, two, or three of the elder citizens, men of the ancient lineage, of sound intelligence and community loyalty, carrying on the town business. And information is not the only good that the visitor brings away from such interviews. Sandwich makes no break in this rule, maintaining a dignity which, in spite of its dearth of business, is worthy of the oldest town in the county.

Here and there is found a mill pond or reservoir to which nature and a discreet art have given all the possible beauty of a natural lake. Such is the mill pond in Sandwich. In truth the water had a little natural pond as the nucleus of it, but this does not lessen the marvel. At the lower end stood the little old mill of former years. On the outlet is a fish way for the omnipresent herring. Around the lower

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parts and on both sides for a distance are modest streets and old homes and the upper parts wind back among the hills.

The more ancient of the two cemeteries is on a green promontory which sets out into the pond. Here the old stones bear such names as Freeman, Faunce, Bourne, Bodfish and Nye. Sunlight, trees, children frolicking in the water, a canoe or two, greenery and reflections on the other side, and old marbles and slates—if there be such a thing as perfect resting places for the dead, the Cape has some of them and this is one.

Southward from Sandwich the road leads up into the moraine and past Bourne Hill to Forest Dale, Wakeby and Farmersville. So small are these hamlets that one rather needs information that he has arrived, but he is in the lake country of Peter's Pond, of Mashpee, Spectacle, Lawrence and Triangle; and to reach it he has come through miles of forest country unbroken by a single shack or a solitary garden plot.

Across the railroad and not far from the village is Town Neck, a big and rambling hill given to common pasture in the old days. It is innocent of trees save a few small specimens on the slope facing the town, and where the descendants of ancient cattle have not cropped

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the grass, are growths of bayberry, low blackberry, and wild rose. If, as some say, Sandwich looks like an old English village, this is the place to see it so. There is the slender steeple of the Congregational church, rising against the forest slopes of the northern face of the moraine, with Bourne Hill at the left, showing its flat-arched curve on the horizon.

The desolation of the old glass factory and its big brick stacks loses its ugliness at this distance and recalls the activity and fame of former generations. On the east are the marshes of Dock Creek and Old Harbor Creek, fronted along the shore by a chain of dunes. Beyond the marshes is Spring Hill and yet farther east, beginning four miles away, is the long-extended group of hills known as Scorton Neck. All these heights, Town Neck, Spring Hill and Scorton Neck, are moraines of recession, leaving valleys southward in which we find the highway and the railway.

Northwest from Town Neck is the northern opening of the canal, with a long breakwater reaching into the Bay on the northwest side of the channel. Then comes Scusset Beach and the great cliffs that stretch off toward Plymouth, with Manomet in the distance. The morainic ridge from Manomet south past Bournedale rises commandingly on the horizon.

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Not all the lore of Sandwich is in the town hall. Along the highway came the grandson of "Johnny Trout," Daniel Webster's guide and friend when he dropped his burdens and turned to the black bass of Mashpee and the trout of the Cape streams. Not far away the grandson was born, for Webster and his friends had given the old fisherman a plot of ground on which he built a home. The cemetery was near—the newer one in the west, and to it the old man that he is now, led the way. There he was long the caretaker, and there he brought a deed by which he handed to Joseph Jefferson the title to a lot which had been his own, but unused. The actor's answer was, "They wouldn't let me live in Sandwich but they can't prevent my burial here." Then Jefferson sat down on the grass with Grover Cleveland for two hours of old friends' talk.

On other authority than the old man's, it is certain that the actor and the statesman both wished to own homes in Sandwich. Overthrifty owners of property, for thrift in the narrow sense is not a stranger to all Cape people, put their prices so far up, that neither son of fame would buy, and thus Sandwich missed her largest opportunity. As for Benjamin Denison, the grandson of "Johnny Trout," reminiscent of old sailing days in Singapore,

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Batavia, and Melbourne, caretaker and friend of the great, may he yet, a "Cape Cod type," as nearly as any, beguile many a stroller by the wayside in Sandwich.

This ancient town has its summer people, but they seem to be her own sons, the mansions are all staid and old—no great hotels and private palaces of the newer architecture—no estates covering wide acres or even square miles of the Cape's territory—no trespass signs—nothing to raise a fear that old Barnstable County is losing its democratic equality of feeling and its simple neighborly ways.

Barnstable is neighbor on the east—East Sandwich, West Barnstable, Barnstable—these are the calls on the train. By the plainest of country railway stations, almost on the railway track, to a modest ancestral home, comes a distinguished Harvard Professor in the summer, to rest himself with Indian lore, eat his summer apples, look out on Great Marshes and Sandy Neck, and show forth the eternal loyalty of the Cape's sons.

You go down a little hill, three minutes, and you are on Barnstable's main—we might almost say only—street. You look up and down, you are looking for the business part of the village and while you are looking you have gone through it unaware. Where you inter-

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RENDEZVOUS LANE IN BARNSTABLE VILLAGE

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sect this one street you find all the essentials of a county seat. Here is an old courthouse of solid stone, with low and narrow halls, appropriate conductors to the not much populated jail that is behind the seat of justice. A few steps westward is the town hall, of wood, one-storied and new. Between the town and the county building is an old style single-storied country lawyer's office, and across the way is an inn. It is all there within a stone's throw.

Go in one direction and if you go far enough you will find the Post Office and the old custom house. It is all one building and on a hill, but the custom house is to be given over appropriately to be a home for local history. Across the road is the old first church and around are the gravestones of the fathers. Some of the more weathered slabs—being mounted in a horizontal position, they have weathered rapidly—have been recently topped with newly inscribed stones, put there by loyal descendants to keep legible the record of their fathers.

Go in the other direction, westward, and if you go far enough, you will find the town pump, the Episcopal Church and the schoolhouse. Both ways, east and west, walking until you are weary, there are lovely homes.

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At one extremity, if you can find such a thing in Barnstable village, is the Barnstable County Fairground, where late in August, are assembled the farm products, domestic handiwork, and, most important of all, the people of the Cape. A bit of vaudeville, a race or two, and if he can come, the Governor of Massachusetts, make the event complete, and the Cape, from Bourne to Provincetown, goes home satisfied.

At the outer end, or where the end ought to be, is a well-kept forest nursery of the State of Massachusetts. Beyond the end, where one looks off toward West Barnstable, there is a change—smaller houses, more farming, different people—it is Finn-land, the Cape's principal colony of these migrants from the lake country of northern Europe.

In front of Barnstable is the harbor, heading for miles of tidal channels among the interminable acres of the Great Marshes. In these are many groups of piles once driven to support and keep from the soggy ground thousands of tons of salt hay. Unoccupied with stacks to-day, save here and there, these useless foundations give a look of abandonment and desolation. Beyond the marshes and the harbor, is Sandy Neck, miles of it, built as a rampart beach along the open Bay, and sur-

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mounted by dunes, here bare, there covered with forest.

A freezing plant and a small dock shed where local fishermen bring their catches, these and a few cottages, are the only signs of life about this harbor, save on the east where stands Yarmouth Port. There a dredge is opening a channel towards another and greater freezing plant, and saves these waters from utter quietude.

A new cranberry bog was coming into being on the edge of the harbor and close to the center of the village. A part of it had been planted and had seen a year's growth, the plants still small and standing in rows about fifteen inches apart. An old Finn was at work alone, removing sand from the adjoining parts, to secure a grade. Interminable looked the job with a single wheelbarrow. He had been in this country thirty years, but spoke English villainously. He almost resented the surmise that an engineer must have helped him to his grades. And the owner afterward told the writer that he had the same experience with the old man, who, by sighting on the ground had laid out last year's section of the bog with but infinitesimal error. Good English or bad, he knew the change in the conditions of living. Ten cents per hour formed his wage when he

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came to America and "dot vass a leetle more better what feefty seexty cent iss now," said this adopted son of old Barnstable.

People in Barnstable? Yes, and friendly as in all Old Colony towns. They will stop their business to talk politics, local history, or theology—leave their store unattended to show you their wide-spreading apple trees, their seven-foot popcorn and their nine-foot field corn, will graciously answer your questions and direct you to the next place of your desire. And if you visit the courthouse you are sure to meet a genial greeting from the County Clerk of long service, and you may have cheerful conversation with the judge of the court, and greet a captain or two from Hyannis, Chatham, Falmouth or Wellfleet.

Here in Barnstable in 1839, the two hundredth anniversary of the founding was held, with elaborate ceremony. Whatever has happened to other towns, Barnstable has more than a chance, twenty years hence, of coming to her tercentenary with traditions unimpaired and her straggling main street keeping unspoiled the look of past generations.

The Town of Barnstable, which reaches across the Cape and straggles along both Bay and Sound, is said to have fourteen post offices. Larger than the parent village is Hyannis, on

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the south shore, the permanent population being not far below two thousand. Like every other New England village, it has a broad main street, bordered with old homes and heavily shaded, but there is no public square. There is a lesser avenue running parallel and there are a few cross-streets. On the south edge of the village is an arm of the great Lewis Bay, where are summer cottages and good sailing for pleasure boats, and the only serious occupations, and these not too serious, are clamming and scalloping.

The rather aristocratic annex to Hyannis is Hyannis Port, a place of beauty on the hilly shore a couple of miles to the southwest where costly mansions, golf and boating occupy a comely bit of the south shore. The railway, branching from the main line at Yarmouth, has its chief station on the main street and a port terminal at the shore. Apparently, however, this marine extension is useless, for Hyannis no more does a marine trade.

Whether a town is spoiled or not by summer trade depends on the point of view. The pockets of the merchant and boarding-house keeper give one answer, the æsthetic feelings or the chafed nerves of the visitant may give another. Be it as it may, the last Fourth of July gave a census of nine thousand automo-

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biles passing a given point on the principal thoroughfare of Hyannis.

Someone in our hearing spoke of "Robber Street." Well what is that? The west end was the reply. We do not say the implication is fair, but something has happened in the old Cape village. There one can find Miss X's or Miss Y's or Miss Z's gift shop, for sweaters, yarns, baskets, windmills and wind vanes. There too are bungalows offering suits, cretonnes, rugs, embroidery, china, glass, antiques, statuary, chairs, and chests on the lawn in front, mahogany and brass, quite direct no doubt from Boston or New York—sideboards, highboys, bureaus, old mirror frames without mirrors, and salesladies who do not in the least resemble Cape Cod.

Motor cars are standing in front, some of them occupied by men having resignation on their faces. In front of a small bungalow home, another gift shop, is for sale a pair of andirons five feet in height, which surely did not come out of any Barnstable or Yarmouth ancient sitting-room.

There are low cottages and high houses and in some back gardens are higher observation towers to bring Lewis Bay or Nantucket Sound up to the main thoroughfare. The sign of the town clerk and treasurer is posted on the front

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of a comfortable dwelling house. Farther along is an old-style lawyer's office and sign in a back yard. A coal and wood, hay and grain office is in a dainty bungalow in the rear of a home. Then one finds a real Cape house, story and a half, old square chimney, shingled from cornice to ground—it refuses to budge in its modern and mingled environment.

If one wants to know what a summer on Cape Cod gives—it offers like all other places of resort to a degree what the visitor carries to it, the choice is an open one, and where there is one shop or one band concert, or one palace hotel, there are leagues of surf, miles of cliff and sand dune, an endless wilderness of forest, lake, and moor, the unsullied purity of the air, and the limitless sea.

One might be set down in the village of Falmouth and not know for a little time that he was near the sea. Indeed Fresh Pond comes in almost to the principal street, but one would not know at its inner end that it was an old salt bay, having now a narrow artificial outlet to let in the herring in their annual migration. There is no great landlocked bay as at Cotuit or Hyannis, and no waste of salt meadow as in Sandwich or Barnstable. A mile of solid green turf however leads down to the sandy

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beach on Vineyard Sound and the cliffs and crest lines of Martha's Vineyard seem close at hand across the seven miles of water that intervene.

Many disciples of "the old man," looking over that water, would have a kindly and reverent thought, recalling that often in the years, that master teacher of earth lore, Nathaniel Southgate Shaler, looked out over the same waters and saw the same skyline as he went to his summer rest on the island.

One does not readily think of Falmouth as now or ever a place for sailors. The only harbor is a dredged embayment, known before the Government deepened it, a dozen years ago, as Bowman's Pond. And a few small yachts comprise the usual outfit of that comfortable haven.

Falmouth is old, but it is very new—it has the village green and the elms and the colonial houses that place it in the old New England class, but it has environed itself with the city and like the city it is. There is no failing to know it when you are in the business center, the shops crowd together and are spacious and modern, albeit of one story, and, let it be added, the only bank in Falmouth village is in a one-story bungalow addition to an old dwelling. Here, in the middle hour of a sum-

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FALMOUTH ACROSS SHIVERICK POND

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THE MONUMENT AT PROVINCETOWN

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...morning, self-l... ...
...ging of the post- ...

...mouth, however, ... escape the ... before the ... of ... pet town ... story. She sent out ... workers and her ... Furnace from Wa...ds Hole to New Bedford, ... how the products ... gorging, digestive ... her young men to the wives and ... ... slip ... ... to honorable ... as did Barnstable, Yarmouth or ... Today one need ... look far to ... ... Cobbly sons ... daughters ... sea-faring masters and ... ... will serve you heartily ... ...

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mer morning, solid lines of motor cars await the opening of the post-office windows.

Falmouth, however, did not escape the ocean but is like every other Cape town in its history. She sent out her whalers and her fishermen from Woods Hole or New Bedford, but she drew the profits of voyaging, disciplined her young men to the waves and received her ship captains home to honorable retirement as did Barnstable, Yarmouth or Chatham. To-day one need not look far to meet the gracious, elderly sons and daughters of those old shipmasters and shipowners, and they will receive you heartily and tell you to your heart's content the inherited lore of the ocean.

People go on the Cape searching for types, and here they may find them—but not of the supposed grammar-smashing, close-fisted, and profane old Cape Codder, dwelling in a low, shingled cottage, in rooms that are never opened to the ocean and air and are innocent of all furniture that is less than a hundred years old. In sober truth there will appear courteous men and women, speaking English good enough for all daily use, living in two-story houses, mansions often, with modern comfort, prudent and decently thrifty, witty in quiet, unexpected turns of thought and

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phrase, people not to be patronized, but to be respected and beloved for their worth and their neighborly ways.

If the newcomer in Chatham has a geographic bent, likes to keep the points of the compass, and have a mental picture of the plan of the streets and shores, he will have more trouble than in any other village of the Cape. The layout of Chatham is as rambling as in Barnstable or Orleans and less simple. The railway station, the new post office, the big hotel, the old windmill, the wireless plant, and the lighthouse might have been sown broadcast from a giant airplane, so promiscuously are they placed, along the ocean lagoons and around landlocked tidal bays.

These bays, which are Oyster Pond and Mill Pond, are in kettle holes resulting from stagnant blocks of ice, that were such frequent features of the outwash plain when it was in the making, indeed, Chatham seems in aimless fashion to straggle around Mill Pond.

Looking on the map one might expect to look out from Chatham down the long beach of Monomoy, but beyond Stage Harbor are grounds of some height, covered by woods and shutting off the view. There are bluffs at the Hawthorne Inn, and at Twin Lights also, marking an earlier stage of wave erosion in-

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CHATHAM, ABOUT MILL POND

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shore. Now the barrier has been built outside and the inclosed lagoons are rapidly silting up. The surf on Chatham Bars marks the shoal part of the barrier. In some future time here too the land will conquer the sea, and Chathamites will have to go out across the lagoon and over the sands of the barrier beach to gain a view of the surf.

An inscription at Twin Lights says that the lights were four hundred feet out from the present cliffs forty years ago. Like changes could be seen at Siasconset on the Nantucket shore—indeed stability is not in the vocabulary of these sandy shores of southeastern Massachusetts. Near-by is a tablet, recording that Pollock's Rip is nine miles off shore, and that there the *Mayflower* turned back and abandoned the intention to settle on the Jersey coast.

On the remnants of the old plain, down in the kettle-hole basins, inland and along the sea, uphill and downhill, Chatham has its physical individuality among the Cape villages, though one is baffled in describing it. It is an old town dovetailed with new things, being in this more in resemblance of Falmouth, and Hyannis, than of Sandwich, Brewster or Wellfleet.

There are low, broad, shingled Cape cottages in plenty, and even more abound the

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more pretending homes of a story and a half or two stories, with siding on the wall, and heavy cornices and corner boards which might be in Hingham or Marblehead or any other New England village. The fine mansions of the old shipping masters are hardly so conspicuous or common as in Yarmouth, Falmouth or Brewster.

Almost every street in Chatham is solidly paved, and the old corner town of the Cape is the natural goal of the traveler coming up the Cape from Provincetown, or skirting the south shore from Woods Hole and Falmouth. One misses here the dense shade of most of the upper Cape towns but finds the big and spreading ailanthus, with its gray bark and silvery foliage.

There is a fishing plant on Stage Harbor and one is rather glad to find the good old signs of sailmaker and some boat repair shops. They save the salty flavor of the place which is in some need of saving, for the signs of survival of the old life are few. It must be confessed that "antiques" have come into Chatham, along with the "Blue Bunny Shop," the "Rose Bower," the "Tea Barn" and "Free Air."

It must be confessed also that Chatham has at least one hotel where only the rich or the very ambitious could be expected to register,

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that the old town has experienced vast increases in its tax roll, that its bread comes from the city rather than from the sea, and yet it must not be forgotten to pass on the testimony of a town officer, himself recalled from a life of many years in the interior, to spend his remaining days in the places of his youth. "The rich here are very democratic," he said. Let us hope he spoke the truth, for the fishing days and the simple days are fast numbering, and it is more than a chance that the mackerel and the lobster for which you go to its very haunts, have come down from Boston on the last train.

The village of Orleans was around the head of Town Cove. The town hall was there, and the undertaker was there and there they are still—and the latter not only buries the dead but chisels the memorial slabs that are set up over them. In recent decades the village business has migrated westward and gathered around the railway station in wooden shops big and little. The hotels have not reached the tourist stage of development, being kept in old made-over mansions of the town. The ever-present public library keeps its watch and does its quiet service between the old and the new, on a triangular park at the intersection of the main roads.

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Growth is strong and luxuriant in Orleans where it is quite possible to gather ten barrels of apples from a single tree and whose elms would look well if they were in Andover or Deerfield. Not very far north of Orleans, Thoreau struck out on the bare beaches of Eastham and began his tale of wave and wind-born sand, and of wave and wind-beaten people, which left unsaid and unimagined the forests, the fields, the homes, and the life of the upper Cape.

Three elderly men sat at the tables and desks in the Town Hall, in safe seclusion, under dull skies, industriously doing the town's business. The walls of this old office were covered with books, in which law reports were as predominant as in an attorney's office. Here were the Acts and Resolves of the Province of Massachusetts Bay, the Laws and Resolves of Massachusetts and Massachusetts Public Documents of various orders and descriptions. Here was the essence of New England, the quality of the Puritan, the survival of the Old Colony. The venerable town clerk active in body and keen in mind, with playful wit, at four score, said that Orleans has for its size more of the old population than any other town on the Cape.

Like other towns in Barnstable, Orleans col-

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lects a considerable part of its taxes from the summer visitor and property owner, but the quiet old place seems wholly unspoiled. There are no pretentious estates, no mansions hidden a mile in the woods of some modern manor, no big hotel,—may the writer be pardoned if in error—but he doesn't think there is a golf course in the town. But there are beginnings of "development" at Tonset, and over on Nauset Harbor, and there are few places on the Cape that have more splendid possibilities, if it be splendid to build summer colonies, than the high and rolling ground that spans across from Town Cove to the Atlantic shore. But the old Orleans is here yet, and the man still lives in Orleans who ran the first train into Provincetown.

In 1895 an elderly gentleman came back to Wellfleet after an absence of forty-three years. He had thus visited the old home in 1852, a time between the earlier and later excursions of Thoreau on the Cape. Great changes had come in Wellfleet between the fifties and the nineties. The great fleet of fishermen had disappeared. The harbor was as free from all signs of commercial life as on the day when the *Mayflower* shallop passed Billingsgate in 1620. The fishing wharves were falling into decay, and the roofs of some fishermen's cottages had

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dropped within the ruined walls. Instead of the simple Cape cottages, English and Italian styles had come in.

In the middle of the last century salt plants and salt-making were everywhere about Wellfleet. There were eighty sail of splendid vessels of the old type, and there was an immense catching of mackerel. Oysters were brought up by thousands of bushels from the south to be planted here. All these industries had gone down and there was little left but a tidy village living comfortably on its past.

And so it is to-day. Perhaps no other Cape village has changed less in the past generation than Wellfleet. The harbor is still there and the mud flats at low tide. The houses are well painted and nobody seems to be poor. Oysters and clams are still harvested but not as in old times. No mansions are being built and no estates are being laid out. There is the same background of salt marsh stretching far inland and the same beautiful ponds lie undisturbed in square miles of unbroken forest. The black fish are still sometimes stranded in the neighboring creeks, and the motor cars go through in greater numbers. A large summer inn resting over the water on piles has been constructed, but otherwise Wellfleet sees little change, keeps its dignity, and might perhaps

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be envied by some other of the towns of Barnstable.

If we make exception of Woods Hole, Provincetown has the only harbor on the Cape that keeps much significance as a haven. Its proximity to fishing grounds will always give this industry a place there but never again is it likely to be the absorbing occupation, filling at once the speech, the pockets and the dooryards of its inhabitants. All the old wharves save one show plentiful signs of dilapidation and decay and the tools of shipbuilders and ship-repairers are rarely heard on the shore.

The harbor will always be used by ships. It is old water for the American navy, though gossip says war ships have declined to anchor there because the town authorities would not let the Jackies come ashore for Sunday baseball. And the same gossip says that the leading Puritans go to the Provincetown churches in the morning and take joyful auto trips in the afternoon. But pleasure will always lure the summer sailor thither and storms will drive in the winter craft.

Provincetown has no soil to count for real agriculture. Tiny patches of dooryard or garden may be covered with earth brought in as ballast, or with mould cut from neighboring swamps and lake borders, but the town must

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subsist off the sea, and upon what it can buy in Boston or elsewhere. There is no background for the farmer, there is dearth of the primal needs of existence as in no other Old Colony town.

The isolation that once ruled here has been lost. The touch with the continental world behind is, it must be said, not very active in the winter, but two modest trains crawling down the Cape every day would have meant intimate fellowship in the days of old Provincetown, even as old as Thoreau's time, when there were sand roads, and no sidewalks, when the sands were encouraged to blow under the houses lest they should lodge around them, when the dooryards were sands and the industries were—cod.

What Provincetown is to-day is summed up in hard roads, one sidewalk because there is room for only one, motor cars dodging and grazing each other from May to September, the daily boat from Boston, Boston and New York papers, and the artist colony.

If the visitor will refuse to see Provincetown in two hours, he will find that it is not all on one street, that there are front and rear avenues and cross-streets, and that not all the homes and not many of the people are "quaint." The resident of the Cape does not

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STREET IN PROVINCETOWN

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like to be called quaint, for he and his Barnstable County are just parts of Massachusetts, of New England, with a good showing of the New England sort of dwelling house and the average Massachusetts kind of intelligence. The sea may have made him in some things different, but he is not queer, he is not a type and does not care to be a subject for even the good-humored comments of the frequenter of the Hudson Valley, or the dweller by the Great Lakes.

Perhaps the artist colony is unique, or at least a part of it. One might see men and women, more of the latter, of all ages, with canvases of all sizes, seated in all kinds of places, in and out of the town, on the shore and lost in the dunes, or marching with apron and palette up the street, in alley ways, back of homes, by every clump of hollyhocks, always at their task or on the way. And let us add gently that some of them and their worthy and distinguished masters do uphold the sacred cause of art and add to ancient Provincetown what we would not see her lose.

One need not be a painter to appreciate in true measure the beauty of Provincetown or the glory of the Province lands and their environing sea. See the long curve from the boat's deck as you come or go, pass in and out among

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the winding and narrow streets, or ascend the monument by its easy inclined ways and sweep the horizon, the Plymouth shore, the cliffs of Truro and Wellfleet, the great fields of gray or forested dunes, the outer shore—there is no panorama quite like this, though mountain peaks may open wider vistas. Or, stand at Highland light, when the sun sets on the *Mayflower* calling place, and all the glories of the sky enfold the old town—see this, but to describe it, that you will not essay to do.

On all the circuit of the Bay, Plymouth alone might be in some danger of outgrowing its old life. Yet it seems not likely to go the way of New Bedford or Fall River, where industry and trade assume engulfing proportions. Old homes and historic places continue to rule the life and color the atmosphere of the first Pilgrim settlement.

New England has enough centers of industry and it is worth while, if it may be so, to leave Plymouth as a goal of pilgrimage, a shrine at which Americans may breathe afresh the bracing air of the ancient courage and simple life of the fathers.

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CHAPTER V

ON THE LAND

THE primary wish of the early colonists was to own land and raise crops. Swift, in his history of Chatham, says that all the early settlers were farmers and they used the sea products only for their own tables. Too much has been said about the poverty of the Cape soils. Thoreau has unwittingly fixed the notion that the surface of the Cape is all sand. He is perhaps to be excused, for his visits were limited to a few days; he dragged toilingly over sand roads and he tramped mainly on the wind-swept outer zone. Thoreau supports his assertion by referring to Dr. Hitchcock, the distinguished geologist of Massachusetts, as authority for saying that the Cape is composed almost entirely of sand.

Without doubt Dr. Hitchcock got the impression of a desert, but even he knew that there was "many an oasis," and he gives his praise to the "pleasant villages" and their obliging and intelligent inhabitants. Thoreau,

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it may in all justice be said, was not the first to receive and give out distorted impressions of the lands of Barnstable. In *Letters from an American Farmer*, written by a Pennsylvanian and published in Philadelphia in 1793, the writer thus delivers himself—"I am at a loss to conceive on what the inhabitants live, besides clams, oysters and fish, their piny lands being the most ungrateful soil in the world." The traveler then makes reference to a Cape minister whose salary was fifty pounds, together with a gratuity of horseshoe crabs, "with which this primitive priest fertilizes the land of his glebe, which he tills himself, for nothing will grow on the hungry soils without the assistance of this extraordinary manure."

Within two years a writer in a book of travel essays on New England, says that "trees do not flourish on the Cape." One is inclined to think that he must have come by steamboat from Boston to Provincetown and that he returned by the same route. It could not be that he ever saw the splendid elm arches of Orleans, far down the Cape as it is, or of Brewster, the Yarmouths, Sandwich, Hyannis or Falmouth, and he could not have been in the more than respectable forests that would have shaded him for endless miles of driving or walking on the great moraines and their

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frontal plains. Even the streets of Provincetown and the forests on its dunes are answer enough to this indictment of Cape soil and the fine forests of Wellfleet are big enough and high enough to lose the touch-and-go tourist in their wilds.

Now it is a rather old notion, holding a good bit of truth, that soil that will grow trees will support crops more or less well, and to this rule the sea corner of the Bay State is no exception. Winslow's *Relation* is more discriminating than the writers we have quoted, for it describes the soil as variable in places—mould, clay, and mixed sand. This old chronicler notes the lesser yield of corn than in Virginia, and adds the very just observation that the difference is due to the hotter climate of the latter region. The corn is "set" with fish because this is easier than to clear new ground. The writer adds that the field had to be watched at night for fourteen days to prevent wolves from digging up the fish. The men take turns at this and so, "it is not much." Fishing, says the author, is a better industry than tobacco.

So it appears that the fathers knew much more about their country than most of the literary describers of the last sixty years. They knew the limitations and the goodness of

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their soils, what they would produce, and that some crops could be better raised than others.

It is fair to say that much deterioration has taken place in the centuries, and in this fact lies some palliation for the unintentional slanders that have been placed on the Cape. The thinness of some soils led to early exhaustion, and the cutting of the forests opened many tracts to destruction of their fertility. Few cattle or other livestock could be kept and thus fertilizers were lacking. The farmers did the best they could with marine fertilizers, as in Truro, where, according to Freeman, one king crab with a broken shell was put in each hill of corn. But there was continuous cropping, and fish, shells and seaweeds could not repair the injury. In some places too, the removal of the trees gave the winds the opportunity to tear up the soil-cover and dissipate it.

Much corn was raised in the Old Colony, even as far down as narrow and storm-ridden Truro, where fifty bushels were often harvested on an acre of ground, and fifteen or twenty bushels of wheat. The grain filled well but the corn was described as "low of stature," a trait which belongs to apple trees, pines, oaks, and goldenrods on that part of the Cape. It will not be forgotten that Standish and his men found the first Pilgrim stores of corn in

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Truro, a town of which Freeman says that though the soils are poor, the corn, rye and vegetables nearly suffice for the population. This record was made less than seventy years ago.

The Indians raised quantities of corn in Eastham and the white settlers in that town produced it for export. From one to three thousand bushels were sold from the town in some years. Single farms raised five hundred bushels of grain and a yield of eight hundred is credited to one. Now there is a barren tract of seventeen hundred acres on the west side, with hardly a particle of vegetable mould, which formerly produced wheat and other grains.

Freeman says that in his time corn ran from twenty-five to fifty bushels per acre, fifty to one hundred being exceptional yields. Onions, wheat and flax were formerly raised, these facts being from the account of the town of Barnstable. Dwight also saw in that town good crops of maize, rye and other grains, a good deal of flax, and a great quantity of onions. Swift in his history of Yarmouth refers to corn, rye, barley, wheat and vegetables. Under the last were to be excepted potatoes, which came in later than the others. Of fruits there were apples, pears, peaches and

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(how suggestive of London market stalls) Kentish cherries.

Every rambler on Cape Cod, if he rambled by foot and not by gasoline, has found fascination in the low, wide-spreading apple trees, planted behind hills and in kettle holes and even then crouching low to escape the winds and holding their fair and juicy fruit where one must reach down to it and even lift it off the ground. Thoreau tells interestingly of these dwarfish trees, which after years of growth, reached the stature of shrubs, yet bore astonishing crops of fruit. Wendell Davis in his description of Sandwich says that the apple trees do not attain much height and in bleak situations are likely to decay in a few years. Some writer, referring to Orleans, says the greening, a low tree, succeeds best. "Fruit trees cannot be made to grow within a mile of the ocean." This simply is not true, as we may see well enough along the narrower parts of the Cape. Barely a mile from either shore in Truro is the small orchard, which took high prizes over hundreds of competitors in one of the Bay State's greatest fairs.

Nor are we to conclude that all Cape apple trees are dwarfs, for Orleans and Barnstable at least will show trees of the full stature of Niagara County or the Hudson Valley. The

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historian of Truro enlarges on the luxuriance of the apples and other fruit, including quinces. Of the low habit of the apple trees he says—"Trees not higher than a man's head will often throw out lateral branches twenty feet or more and yield freely. It is not uncommon for the fruit growing on the uphill side to rest on the ground."

The Corey fruit farm is on the south side of the Pamet valley in a recess in the hills. A Portuguese, born in the Azores, and his son, gradually cleared a tract of forest, leaving a wooded rim on three sides, and here they have brought to bearing several acres of apples, peaches, pears and plums. The growth is luxuriant and the drooping branches in places rest their fruit on the ground. The trees were heavily loaded and looked like the irrigation growths of the Yakima valley or Western Oregon. The soil is sand, "worse the farther you go down," and is kept up with fertilizers. There is thorough pruning, spraying, and thinning and the fruit is marketed by auto on the Cape without middlemen.

A thousand fowls are kept and the broilers and the eggs are sent to the Massachusetts General Hospital. This orchard is in the middle of the Cape, and it is not far from a mile and a half either to the Bay or to the ocean.

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Mr. Corey's half a thousand trees at Edgewood Farm show what industry and high intelligence can do with the Cape soils and climate, and the enterprise has served as a model and object lesson to hundreds of gardeners and farmers in the eastern parts of the Bay State.

There are many gardens in exposed Truro, often on low kettle-hole floors in the midst of thin and brown pastures and acres of wild moor. Thus environed with a half-desert of mosses and wild cranberry, these small, sheltered and moist plots produce all the common vegetables in luxuriant profusion. By the railway in Wellfleet, completely framed in forests of pitch pine, one gets a flying glimpse from the car window of one of these little paradises of domestic culture. On the uplands, however, of the lower Cape, the turnip, corn and beans often look the image of poverty and cast doubt on the sage conclusion of Josh Billings that "piety and white beans flourish best on poor sile."

The salt marshes of the Cape border, now offer little in the production of food for man or beast. In old days they were vastly important for their salt hay, and in time to come they will be reclaimed and be like little patches of Netherlands lowland. We may

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GREAT MARSHES OF BARNSTABLE

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reckon nearly twenty thousand acres or more than thirty square miles, as the Cape's endowment of such swamps, which the tides are adding to the land areas. They are found from Sandwich to Provincetown on the inner shore and from Buzzards Bay around the south shore, but are absent from Nauset to Provincetown on the outside. The largest swamps are the Great Marshes of Barnstable and those along the Herring River in Wellfleet.

The marshes of Barnstable seem interminable even though they are rimmed by the long dune range of Sandy Neck. A survey for a Cape Cod canal made by James Winthrop in 1791 records an estimate of four thousand acres of marsh there. A committee was early appointed in Sandwich to divide the meadowlands, to give "to every man such a portion as shall be esteemed equal and suitable to his necessity and ability." The holdings ranged from one to forty-two acres.

President Dwight saw several thousand stacks of hay on the Great Marshes. This is much changed to-day and salt grass is little cut now as compared with olden times. It is injurious to milk when fed to cows and has largely been replaced by upland hay, which, in spite of romancing magazine writers, has a way of growing in the upland meadows of

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Barnstable. The lonesomest thing about the Great Marshes in an August day, when the hay ought to be there, is to see groups of low piles, driven long ago to raise the stacks above the marsh, now unused and going to decay.

No doubt there has been a decline in Cape farming, but it is due not so much to depletion of soil, as to absorption in other occupations. The going over to other means of livelihood arises from greater profit, for the staple foods come in from lands lying far to the west. Cheap transportation, richer soils and fields adapted to machine tillage, have wrought the change. This is the same story that may be told all over New England, and even in New York, where farming has been limited and directed into specialties of culture.

Getting down to hard facts, Barnstable County has a little less than a fifth of its land in farms. This is less than any other Massachusetts county has except Nantucket and Suffolk, the latter containing the city of Boston. Plymouth County has nearly a third of its land in farms, but this is less than half as compared with the six great counties from Middlesex westward to the New York State line.

No county in Connecticut has less than three times the proportion of farm lands which

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Barnstable County shows. Even Maine with its enormous wilderness has but one county with a smaller proportion of farm lands than Barnstable.

If one is looking for bread there is not much on the Cape that does not come from far. Considering the whole state in 1910, Barnstable raised one bushel of cereals in two hundred, but Plymouth County did better, with one bushel in about thirty-three. Remembering the frequent early stories of wheat, rye and barley, Barnstable in the last census had a paltry two acres of wheat—thirty-one bushels—with no barley and only sixteen acres of rye. Even of corn, which was in every field and on every annalist's page in Puritan days, the Cape raised less than a half-bushel for each of its people.

Barnstable and Plymouth have gone over to fruit and vegetables, with some attention to the dairy and to poultry. By far the largest production is in the small fruits, of which these two counties of the Old Colony raise more than three quarters of all that are grown in Massachusetts. If we include orchard and small fruits they make about two thirds of all the foods that come from the soil of the Cape.

Here we have a typical adaptation to wide-reaching modern conditions, in a region which

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once had to raise nearly all of its own food. Now it raises what is suitable to its climate and its soil and fits its products to its neighborly markets, which are afforded by the summer migrants of the shore, and the great populations of Boston and Providence.

It would not be easy to find a better adaptation of nature's conditions to a crop that one sees in the cranberry. The Old Colony got from the glacial invasion and the resulting break-up of old drainage lines, more than its share of swampy flats. It is usually easy to find a sand bank in neighborly relation to the bog, and exposure to oceanic influences has given a longer season without killing frosts than is found in most parts of the northern states. To be able to flood the field, to dress it with sand and to have a long growing season—these are the three essentials of cranberry culture.

It is not an old industry. There was an accidental discovery, early in the last century, in North Dennis. Sand blew in on a patch of wild cranberries and showed what it could do for them. The real culture of the berry began in 1846 and 1847 at Pleasant Lake in Harwich and apparently there is no town on the Cape which is more dotted with the bogs or more pervaded by a kind of cranberry atmosphere

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HAND PICKING OF CRANBERRIES. THE NECESSARY SANDBANK IS CLOSE AT HAND

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than this same old Harwich. If Harwich has rivals in the frequency of lakes and abundance of swamps, they are Yarmouth and Barnstable and all three are great cranberry towns. There are many in Brewster and Dennis, some in Orleans, and not many in Chatham. West of Barnstable, the crop is in moderate proportions, in Mashpee, Falmouth, Sandwich and Bourne, and then come the great areas and innumerable bogs of Plymouth County. All the Massachusetts cranberries pass in the common thought as Cape Cod product, though more are grown in Plymouth than in Barnstable.

A Reverend Mr. Eastman of North Dennis published a book on the cranberry and its cultivation. Cuttings were sent thence to New Jersey to start the culture there. Wild cranberries were used in times before its commercial development, for there was a ruling as far back as 1750 that no bayberries should be gathered until September 10, and no cranberries, wild berries of course, until October 1, under penalty of two pounds for each offence.

Not many cranberry bogs can be seen on the Cape below the town of Orleans, though 331 barrels were reported for Provincetown as far back as 1859. From Orleans up the Cape, however, nothing is more common or charac-

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teristic. You see the bogs from the railway, from the highways and along the by-paths. They are irregular in shape, running into secluded nooks and rounding the bases of glacial hills, while ditches for flooding and drainage run around the border and in square patterns through the interior of the biggest bogs.

Looking off over the field the vines do not seem more than a few inches in height, but that they are straggling and long appears when the harvester draws his scoop through them and pulls them from their lurking places near the ground.

Invention has done its part in the cranberry harvest, for not only is handpicking almost abandoned, but the smaller scoop as well. Most pictures show the men and women on their knees in the bog, which during the picking season is however anything but wet. In recent years the big scoop has come in. The scoop is about sixteen inches wide, with about that number of flattened tines, so spaced as to let the vines drag through and hold the berries. When full the scoop holds six quarts, and the pickers, giving it three or four shoves through the tangle, usually find it loaded with three or four quarts. It is stooping work, and strenuous it would seem for all but muscular and wiry backs.

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A bushel may be picked in five minutes or even less, though the average time is greater. A good picker, working at twenty cents a bushel, readily earns a dollar, or even a dollar and a half, in an hour. An expert in picking, the superintendent of a big bog, a sturdy middle-aged Finn, said that handpicking, involving the opening of the vine tangle with the hands, was not nearly so favorable for the future well-being of the bog, as the scoop method. By the latter the vines are pulled up somewhat evenly, and after the removal of the crop, clipped off at a certain height, providing for good and uniform development the following season.

The big scoop might seem wasteful if we did not take account of the time and cost of labor. Several barrels of berries may be left on an acre and hand-gleaning would soon provide berries enough for a thanksgiving feast. But the market value of these left-overs would be far exceeded by the cost of rescuing them. The big Finn was expecting about four thousand barrels from the forty acres of bog where he was opening the picking season.

The bogs and the pickers, and the colors of the filled crates give zest to the September landscape, and a near view of the field glowing with ovoid jewels might easily raise an ambi-

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tion to own a cranberry farm. Like other enterprises it has its ins and its outs, its gains and losses. It costs to grade and plant and weed a bog, and when one takes account of flooding and frosts and insect pests of various kinds, of the labor involved and the vicissitudes of the market, he may well hesitate until sure he has the capital, the intelligence, and the intrepidity which any other worthwhile enterprise demands.

After the cranberry comes the strawberry, a remote second in acres and dollars and yet not to be forgotten. They are early—a June crop on the Cape, opening the small fruit season as the cranberry closes it, and flourishing on the high and dry ground, where the tangled mat and brilliant round berries of the hog cranberry might thrive, but where the thanksgiving fruit could not grow. Both berries therefore show a definite response to soil conditions. There is enough upland bearing a light loam cover to raise in Barnstable County, strawberries for all New England.

As yet, however, there is, in a large commercial way, but one strawberry town and that is Falmouth. And there is but one strawberry raiser, the "Portugee." Seventy-three carloads of this fruit were shipped from the freight depot of Falmouth village in the summer of

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H. A. Dickerman & Son, Photo

THE CRANBERRY HARVEST, WITH THE SCOOP

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1919. This will mean more if we say that two to three hundred crates make a carload, and that a crate may hold from thirty-two to sixty quarts. Striking an average and doing a bit of multiplying, it comes out that somewhere near a million quarts of berries went to Boston and other markets.

This is an achievement of about ten years, by newly immigrated men and women, and let it be added, by the rather numerous children that count in every Portuguese family. It is a story of family toil, of oak scrub, grubbing, burning, plowing, planting, fertilizing and cultivation. The fields are clean, the rows are straight and the plants are deep green and strong, and in them a new phase has been welded into the industrial life of the Cape.

The Portuguese have not forgotten the raspberry, and the bright red of this fruit finds its way out of Falmouth to the amount of fifty crates per day in the picking season. The little plantations are not without corn and beans for home consumption, and the thrifty owner, who has not been trained to be distressed by the toiling of wife or child in the field, cranks his truck and goes to market over a state road, and moves on an economic plane several notches above the condition of his old life in the Atlantic Islands.

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The Cape has another gardening specialty in the crops of asparagus that flourish in the town of Eastham. One or more carloads of this vegetable go from the railway station each morning in the season and fields of several acres are common objects by the roadside. One grower in Eastham expects to increase his plantation from the present twelve acres to forty or fifty. He bought nine acres out of his twelve, paying five hundred dollars for each of them. The great ranch at Hatchville has eight acres in asparagus and will have five times this amount if present plans are carried out. The director of the Cape Cod Farm Bureau, expects asparagus to increase on all parts of the Cape, but he does not expect to see another town go as far with the culture as has been done by the farmers of Eastham.

There is a new agricultural life of the Cape. A fresh impulse has come in old Barnstable as it has among the hills of Connecticut or in the valleys of Vermont. Some crops can be raised on Cape soils and it is worth while to raise them. The farmer can get as much return from a quarter of an acre of corn as he could formerly from two or three acres. Foreigners must however do most of the farming because the natives will not. Many retired people live on Cape Cod, and they will not clear

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the scrub or dig in the soil, when they have already the modest income which will support quiet and simple lives of comparative leisure.

Vegetables, fruit and poultry will offer permanent industries on the Cape, and the fruits will include apples but not peaches, which need more sheltered situations. Dairying can hardly be other than local and limited, because the amount of pasturage is small and the cost of imported grain is prohibitive. Cereals during the year of this writing quite outdid the census record. Indeed this has been true for more than one year, as in so many other parts of the East, because of the impulse given by the war to the raising of breadstuffs. A single firm was threshing the grain, mostly wheat and rye, from one hundred acres of land in the neighborhood of Barnstable.

Roadside markets are coming into vogue in the Cape summertime, and in this there is the greatest variety, for some farmers, or their wives, can make attractive displays and others have no trace of this art. Those who do make their wares alluring can sell them at almost any price when so many pass with plethoric pocketbooks and prepared to be surprised by luscious fruits and choice vegetables derived, in spite of reported barrenness, from the Cape soils. So long as food is imported into the

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Cape during every month in the year the local farmer need not fear for his market.

The farm bureau seems to be putting a new impulse at work, and it reaches not only the farmers, but the schools and junior clubs in its worthy propaganda. The Bureau works in co-operation with the Massachusetts Agricultural College and the United States Department of Agriculture. Thousands of persons have attended the various community meetings and farm demonstrations.

Even the casual eye cannot overlook the new developments on the upper Cape. Old gardens have taken on fresh beauty and plenty of new ones have been created. The walls, the fences, the arbors and beds of shrubbery begin to remind one of the greenery of the English countryside, for be it remembered, a climate which is mild in spite of bad repute of New England winters, lets every season's growth build on the last, and does not, as in our continental interiors, destroy a summer's achievement by the zero descents of the succeeding winter.

The summer resident likes to dabble in fields as well as flowers, and the tallest oats the writer ever saw stood in the shock by a summer mansion on the Falmouth plain. And there was corn, which like many other plots and

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fields of this grain in Falmouth, Sandwich, Mashpee and Barnstable, would have looked well on an Ohio or Iowa plain. The landlord of the old hotel by Mashpee Lake said that feed corn at more than two dollars a bushel was too much for him and he broke up several acres of hillside that may not have been plowed in forty years, and on most of the slope he had a fair crop coming. A neighbor's field, which had had a decade of careful bringing up, with fish for fertilizing, had corn like a forest.

Hatchville is a hamlet in the outwash plain several miles north of Falmouth. One passes through forests to get there and finds tokens of rather ancient culture around the waters of beautiful Coonemosett. There are cranberry bogs around the lake above the water level, with pumps for flooding, and other bogs follow down the natural grades of the outlet valley. Some of the farms show excellent culture and a variety of crops, including apple orchards well laden.

Close at hand is an example of general farming on a large scale with application of all modern methods. Here are the central buildings from which stretch out on the plain the fourteen thousand acres of the great ranch in which Mr. Charles R. Crane is interested. There is not much left to be desired in the

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farm buildings, which include the office of the superintendent, great barns and an ice plant. The central feature is a herd of a hundred cattle, Holstein, Jersey and Guernsey. To drive in the fields was suggestive of the spaces of the West. There was a sixty-acre cornfield, flanked by a great pile of empty barrels. Wondering what they had held, the fish scales that still clung to the staves told the story. They had fertilized the cornfield, putting on the fish with a manure-spreader. There was good second growth clover, a poor meadow, a fair potato field, and eight acres of young asparagus.

All around was oak scrub, and out beyond this very flat piece of the outwash plain the Falmouth moraine rose boldly on the north and west. All this is deeply interesting, and may mean much for the Cape. It must be remembered nevertheless that this type of model farming is not for the aspiring boy with no capital, and so it may be that the object lesson loses much of its value. It may well be suspected that such farming cannot pay, in the ordinary sense, for it can never bring returns on the vast overhead expenses that must have been involved. But such operations at least might check the imagination of polite scribes who find so much delight in the barrenness of Cape Cod.

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Not far away at Forest Dale, reached more naturally through the forests from Sandwich, is the estate of Dr. Lombard, who combines ranching in Colorado with big farming in the Old Colony. Here are about fifteen hundred acres, with the central parts under cultivation. There were eight acres of corn, and eight acres of potatoes, as fine a stand as could be seen in Aroostook one would think, with rows stretching half a mile and straight as a beam of light. This was the second crop on recently broken scrub. The trees are pulled with tractors and the plough goes in two feet, pulled by a forty horse tractor. Then a powerful disk is put over it, and right here in the middle of the parlor writer's Sahara, the soil, the humus-filled layer, was eighteen inches deep. Of course this is exceptional, for Cape soils are patchy, but it reveals possibilities.

Mr. Frederic Tudor of Buzzards Bay is another of the growing group of progressive farmers on the Cape, working a tract of four hundred acres, and combining cattle, poultry, fruit, and vegetables in his enterprise. He thinks, however, that the future of the Cape region is in small, one-man farms of five or ten acres with the same mixed production to which he devotes himself on a larger scale.

The Cape seems peculiarly fitted for nursery

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operations and much has been done in this field during a few recent years. An example is found in the Farquhar nurseries in Barnstable, a branch of a larger establishment lying inland in eastern Massachusetts. The account of its superintendent is quite worth quoting as showing what can be done on lands supposed to be fit only for a wilderness.

"The nursery was started six years ago, the land then being old pasture, and oak stumps, and pitch pine. The soil is good, light loam with spots of peat or clay. We are still clearing land as needed. We find the climate more even than inland and little loss from winter killing of plants. This district is called the Plains, and is about three miles from salt water north and south. Farming near-by is small and rather poor. Some of our principal crops are azaleas, kalmias, roses, lilacs and other ornamental plants; conifers, poplars, willows and a general line of nursery stock. We grow a great many hardy liliums in all stages from seed to larger bulbs, also some flower and vegetable seed. All our crops grow well, and we find the soil and climate very suitable for this business. We have about sixty-three acres in cultivation."

In the western end of Barnstable village, back of a comfortable mansion, several acres

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MASSACHUSETTS FOREST NURSERY, BARNSTABLE BAY AND SANDY NECK

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of rolling moraine lead down to the border of Great Marshes and Barnstable Bay. This small farm is a forest nursery of the State of Massachusetts. Work began here in 1913, and the nursery now has over four hundred seed-beds, covering eight acres of land. The plantings consist of white pine, Scotch pine, Norway spruce, larch, Douglas fir, and arbor vitæ. About a million two-year white pines will be ready to plant in 1920. The nursery now has four million trees in various stages of growth. A hundred years later when two or three generations of conservation have succeeded the destructive revel of the lumbermen of the nineteenth century, the glory of the New England white pine may revive, and the forest production become as real as it is now reminiscent.

This is what industry and careful thinking have done on Cape lands. It was no outsider with money, but young Cape blood, which has developed the great Mayo duck farm on high and steep-sloping hills that look out to sea on the eastern shore of the town of Orleans.

Nine years ago there came to one of the outer towns of Barnstable a would-be farmer who had never milked a cow. He bought a place, put a mortgage of twelve hundred dollars on it and transformed it into a modern

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home. Now he has a dairy of ten cows and four hundred head of fowl. Each laying bird cleared him last year, not charging in his labor, the goodly sum of five dollars, and his success has been so pronounced that he got without hesitation a federal farm loan of two thousand five hundred dollars.

The sands of Provincetown have another example which sounds more like a tale than like truth. One eighth of an acre holds a house, a shed, chicken houses, a garage, two greenhouses, and fifty dwarf trees. Vegetables grow among the trees and buildings and ten thousand eggs are an annual product. The owner has supported his family on this ground for nearly twenty years, and his records cover the whole period. He has not imported soil, and has never bought commercial fertilizer. These rural miracles would tax the faith of the prairie owner of a half-section, but are less unbelievable if one has compared the raw wastefulness of new America with the frugal and laborious husbandry of the old world.

If we follow the coastal belt of New England from the New York border to a remote point in Maine, it is remarkably given over to the factory. Beyond Fall River and New Bedford however, manufacturing never got much hold on the shore of the Old Colony. Even Plym-

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outh is only enlivened, not vexed with wheels and shafts, and Cape Cod, beyond the canal strip, has lived on in primal simplicity.

The only great manufacture the Cape has ever had depended on the proximity of the sea. Plymouth itself had an early trial at salt-making, but the fellow who was sent to Plymouth to make salt proved worthless, and his inefficiency, as far back as 1624, helped to complete the Plymouth failure in building up a fishing industry.

About all American salt before the Revolution was made from sea water, which was boiled down in kettles. It took three hundred gallons and more of sea water to make a bushel of salt and to get the needed fuel played havoc with the slender forests in the northern parts of the Cape. During the Revolution the General Court, following an action of the Continental Congress on the importance of salt, urged the coast towns to take up this industry. As a bushel of salt in 1783 was worth eight dollars, no great persuasion was needed.

Evaporation by the sun's heat came in a little later, and vats were built which could be covered in time of rain. This was about the beginning of the last century. A resident of Dennis is said to have patented a method of solar evaporation in 1799. The water was at

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first moved by means of buckets, then by hand pumps, later the pumps were operated by wind power. Outside of Barnstable County salt was made at Plymouth and Kingston, at Hingham and Dorchester, and on the outer islands.

The salt business seems to have reached its height in the years following 1830. Then western salt began to come in, other salt came from foreign lands and the cost of making it on the Cape rose through the increase in the prices of the lumber built into the vats, for this was pine from the State of Maine.

Every old chronicle has much to say about salt and tells how numerous the plants were. In Truro, "salt was manufactured all along the shore and by creeks and coves and was brought down to the wharves in scows to a ready market." Eastham at one time had over fifty salt-making plants and Chatham had not less than eighty. Quite in harmony with these records, Dr. Palfrey at the Barnstable bicentennial in 1839, spoke of voyaging for twenty miles south of Provincetown, "along a shore which seemed built of salt vats."

The upper towns of the Cape, or at least several of them, took up the work even on a larger scale, the whole Cape using at one time a capital of two million dollars and producing

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not far from a third of a million bushels each year. Thoreau speaks of salt works "all along the shore." He had just come from the wider parts of Massachusetts and was dragging through the sands of Barnstable and its neighbor towns on the way to Orleans where his walks began. This was probably in 1849 at the time of his first visit. Swift, writing the annals of Yarmouth as late as 1884, says that the salt business was about at an end. The last salt plant in Yarmouth, operated by one man, was, however, making twelve hundred bushels of salt as late as 1885.

Timothy Dwight, whose Cape Journeys and others were in print in 1823, is rarely more interesting than in his rather long story of salt. He describes the process at some length, and is interested in the prices and market conditions. He is sure the business cannot be overdone and then, assuming easily that our American coast is chiefly barren and otherwise would be thinly peopled, he foresees multitudes gaining their living in this useful manner. There were seven millions of people in this country when he wrote this diary in 1811, and he discerningly prophesies that within a moderate period there will be seventy millions. They will all need work and they will all need salt. Of course therefore they will build salt

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vats from St. Mary's to Machias. Rhapsodically he goes on; affluence will spring from the sands of eternal desolation; villages will smile and towns will rise out of existing solitudes. Let him set before the reader in his own words his eloquent blending of economics and religion. "May not multitudes, who habitually spend life in casual and parsimonious efforts to acquire subsistence, interluded with long periods of sloth and drunkenness, become sober, diligent, and even virtuous, and be formed for usefulness and immortality?"

Gristmills and sawmills are among the earliest necessities of a new settlement. When the Cape began to be settled the only gristmill was at Plymouth and long journeys through the woods were the only recourse of the new people of Sandwich. But carrying grists on backs and horse backs for twenty miles was intolerable, and there was water power at Sandwich. This was soon utilized and thus simple manufacture began on the Cape.

The building of a mill came under a public permit and regulation, and was sometimes subsidized. Mills were few and the business was vital, hence millers were exempted from military service and from some other public duties. There is less and less water power as one goes

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farther out on the Cape. In time there were at Sandwich other forms of industry, and Freeman records the existence of a cotton factory, a nail factory, and marble and glass-works.

In Falmouth there were in time eight mills, one fulling and seven grist mills, most of them run by wind power. The Monument Iron Company of Sandwich was incorporated in 1847. An Orleans windmill ground grist as late as 1892. One of the hotel cottages at Highland Light is known as the Millstone. The mill was on a hillock west of the light, and one of the great stones is now the doorstep of the cottage. Bricks were made at an early date in Plymouth and also in Scituate.

There were other minor industries. Some of them were related to the forests. Whites and Indians were at one time forbidden to bark or chip the pine trees for the making of turpentine. Some tar was made and found a ready market. There were regulations in Truro against cutting wood to burn lime for export. Thus the natural limitations of the environment were reflected in the community's struggle to protect itself, and to stretch its small resources to cover home necessities.

Shipbuilding was a natural and imperative industry, and the denuding of forests for this

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purpose receives frequent notices in early chronicles. Both pine and oak were thus used, and that they could be used suggests that there must have been better trees than now. Yet it must be remembered that ships were small, and that sticks were used which would be disdained by the ship-carpenter of to-day.

A flint-glass factory was erected in Sandwich in 1825; and this industry gained a permanent place in Cape history, for a great factory was built at a later time, whose stacks and walls are among the first features to be seen as one goes upon the Cape in modern years. In 1854, the capital employed was five hundred thousand dollars, and the yearly product was considerably beyond that figure. For a long time these glassworks were the largest in America. The business ceased about 1880.

The Old Colony coast strip is not without its mills and factories but it does not go in strongly for manufacturing industries. Yarmouth has wire-work, Provincetown puts up canned goods, and there is a brickyard at West Barnstable, where some of the old glacial or interglacial clays of the Cape come to the surface.

The only big manufacture on Cape Cod is at its doorway. There was a blacksmith shop

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ANCIENT MILL AT HYANNIS

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in Bourne in 1829. It had developed into a machine shop in 1849; and made among other things, tools for use in the new gold mines of California. To-day Sagamore has grown up around the immense Keith Car Works. The employees fill the village and come in daily from miles of the surrounding country, while the surprised tourist, making his first journey to the Cape, thinks the smoke and clatter quite out of harmony with his expectations, and struggles in vain to look out on the waters of the Bay, because he cannot see through the endless chain of new and empty freight cars that have been rolled out on the siding leading toward Sandwich.

There is a small factory far out on the Cape, at North Truro station, which is more in harmony with its environment. Here are made jellies of beach plum and wild grape, baskets out of cat-tail flags, and trays and table mats out of beach grass. But the main product here is bayberry wax. The gray round berries, the size of shot, are brought in here in the autumn, in October and November, for making bayberry balm, bayberry cold cream, and bayberry Christmas novelties, most of all the bayberry candle. A bushel of berries makes three or four pounds of dull green wax, and a young woman will at all times obligingly dem-

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onstrate the dipping. Thirty-five dips in a pot of melted wax, and as many coolings, and the candle is complete, under your eyes.

Every respectable large town in New England is supposed to have some enterprise that is the biggest of its kind in the world. In this old Plymouth runs true to type. In its circulars of industrial opportunity, the Plymouth boomer tops the historic interests of the place with the Plymouth Cordage Company, whose buildings are a little city in themselves. And you are not permitted to forget that regular steamers bring sisal fiber up from Yucatan and steam to the Company's own docks in Plymouth Harbor. There are large textile concerns also, and factories for metal-work and rubber, and other smaller industries.

Still it is true that the visitor may enter Plymouth for two hours or for days, and not be disturbed by smoke or by sounds. If he happens to be at the right point at the right hour of the day, he will see hundreds of people leaving their work and boarding the electric cars for home, but still he may tread the old Pilgrim paths, revel in relics and records, ponder above the historic dead, look out over the Rock upon the harbor and sand beach beyond, dream of the *Mayflower*, and of Scrooby, and be unmolested by modern workaday things.

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Plymouth has been enlivened and enlarged, but not submerged.

Communicating to an elder citizen of the Cape the view that the summer business was the largest industry of Barnstable County, he was of another opinion, and thought the cranberry was first and fishing possibly a second. Unconvinced and interpreting the kindly gentleman's conviction as loyalty to the older Cape, every intelligent person later encountered was rather sure to be faced with the same question. In every instance the visitor's satisfaction was increased by an agreeing answer —the largest material matter for the Old Colony's foreland is the summer boarder and the summer homemaker.

In other phrase, the Cape has gone over to the land, but only because the land is by the sea. It is not merely so much in board bills, in the weekly routine, or after the auto's one night sojourn; the butcher, the baker, and the candlestick maker do not get it all, for carpenters and plumbers, and decorators and perpetual caretakers receive a stream of money and the coffers of the Cape fill in a thousand unseen ways. A shoe dealer in Hyannis prided himself in his good year-round trade but confessed that "we'd have dull times if it wasn't for the summer people." Certainly a

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firm of Greeks in that same old village, doing an immense trade, wholesale and retail, in fruit, would have no place among the Yankees of that shore, if the hunger of extra thousands had not every summer to be appeased.

Sandwich was said to be a place of resort for "distinguished persons and families" before the days of Newport and Nahant, and the historian (Freeman) observes that retirement, comfort, recreation and health were then preferred to display and the crowds of modern watering places.

There are summer crowds in some places on the Cape, but it cannot yet be charged that there is much display. There is luxurious comfort in home surroundings, but the utmost opulence has not anywhere on the Old Colony shores from Marshfield to Provincetown given itself to ostentation, or made itself offensive to those who would live plainly and think nobly by the sea.

To visit the town hall or to find anywhere the town assessor, and view the tax record of the past thirty years, is the best evidence that summer industry is dominant. Falmouth in 1872 had taxation values of less than two million dollars. The next twenty-five years almost quadrupled the total of property in the town, which was more than six million dollars in

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value. Another twenty-five years brought the figure up to twenty million. Most of the personal property is now cut from that figure owing to recent changes in the order of state and federal taxes, but the fact remains, the only fact that interests us here, that, it was not farms or fishing or cranberries, but the summer person who has thus added to the resources of this old town.

The financial story of Chatham is the same, for real estate values of a little over half a million in 1890 have reached in 1919 a figure of more than two million dollars. No doubt Harwich, Barnstable, Yarmouth, Orleans and Provincetown have seen like changes, which show with no uncertainty what the future of the Cape is to be.

Many of the summer homes, it must be remembered, have not been built by alien hands. They stand for the unforgetting love and loyalty of returning sons of the Cape, who do not come back to vaunt their prosperity, but to breathe the air and refresh the memories of their early life, or to rebuild the ancient homes of worthy ancestors. And it is because they have come that a beautiful church stands here and there, that public libraries are as common as windmills once were, and that the traveler is lifted out of the sand and whirled

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over joyous roads from one end of the Cape to the other.

The government map of Falmouth, whose survey was made perhaps thirty years ago, or a little more, does not show a single house on the road that runs from the village, between Salt and Fresh Ponds to Vineyard Sound. Now there is a succession of mansions each in ample grounds. The highway is macadam, the hedges are scrupulously geometrical, and some of them solid green of eight or ten feet in width, while others are high enough to afford truly English seclusion of home gods.

Some of the inclosures are of walls, built of the abundant scatterings of glacial boulders, blooming with nasturtiums or banked with tall dahlias or barricades of sweet honeysuckle. The town shows its roof-lines among trees and again the landscape would be English if only the four-square church-tower were of stone instead of New England pine.

A stroller along the Vineyard shore meets the ominous sign—"Private dock and bath houses, no trespassing." So one cannot follow the strand there unless possibly over a stony pavement at low tide. In the necessary detour, a woman comes out of a house and rows you across Falmouth Harbor for a small coin. You resume your walk, gently querying what

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a temperate comment would be on all these arrangements, and you are perhaps inclined to feel kindly to the ferry woman, and all-ignorant of strand law, you wonder whether anybody has a real right to warn you away from the Atlantic Ocean. It is just one of the things that are not common on the Cape, and one might be simple and primitive enough to wish that the ancient democracy of this New England corner might be saved for all time.

So it is that most Cape men live on the Cape to-day. No longer is it a land to which hardy sailors come from the Banks or from the antipodes, to make brief visits to their families and deposit their savings before the next voyage. The people of to-day are landsmen, most of them, voyaging only to their lobster-traps and their fish weirs or to tong for bivalves. But they still breathe the sea air, their apple trees stand low under the gales, their gardens are down in the hollows, and if they do not live upon the legacies of their shipping forebears, they minister to those that come down to the sea—they are, as the learned professor said, amphibious still.

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CHAPTER VI

THE HARVEST OF THE WATERS

ONE might spend his summers on the Cape for years, and never, unless he sought it, set his eyes on a codfish. Yet no one doubts that the Cape was suitably named, or that John Smith, interested more in whales, found codfish, and sixty thousand of them in a single month. "The best mine that the King of Spain hath" would not, according to that thrifty and prophetic old sailor, offer more solid values.

American fisheries were the liveliest thing in the mind of Europe, when that mind turned toward the newly found hemisphere. Thousands of fishing voyagers plowed the Atlantic waters before Gosnold, and Pring, and De-Monts, and Smith wrote their names on the continental border. This was the strongest force that impelled the English and the French to plant colonies. They knew the ins and outs of the New England shore long before the Pilgrims sailed. Samoset learned his English

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from fishermen, and Plymouth was the third name given to that place by explorers from Europe.

The salt waters and the tide flats were an important source of food, for Plymouth and the other early settlements, and this supply was imperative in times of scarcity. But fishing was not a large industry in Plymouth; indeed, some of their ventures were of such ill luck that they said the fishing undertakings of Plymouth were always "fatal." Sometimes they had to cover their losses in fish by trading in furs.

Such fishing as the Pilgrims accomplished is an example of the force of environment, for the early settlers of Cape Cod had been farmers and artizans. It was their new home that sent them fishing and on commercial voyages. They did not come to use lines and seines. They had no apparatus or supplies for this industry. They did not even plan to settle where the fish were, but would have gone to the banks of the Hudson, it may be, if the sailing had been good. They were apt to fail when they tried the business, even while the Massachusetts and Maine colonists were catching and selling fish to great profit.

The Pilgrims were glad to fish when they

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were hungry, and it was the cod and other fish, with lobsters, eels and clams, or oysters brought to them by the Indians, that saved them from starvation. The industry was well recognized in the early regulations and statutes. This was true even while the Old Colony kept its identity, and shortly after the union with Massachusetts, or in 1694, the General Court made laws concerning the mackerel and other fisheries. There was a duty prescribed of twelve pence per barrel, recognizing "the providence of God which hath made Cape Cod commodious to us for fishing with seines." The proceeds were turned over for the support of a free school at Plymouth.

Barrels of fish in no way measure the importance of fishing in the Old Colony. Lines of worldwide trade began to shoot out from the coasts of Barnstable and Plymouth, and it was fishing that was behind them. This was the large factor in starting the round of commercial exchanges. Cape ships carried the fish to the West Indies, and brought back molasses and spirits, which the Cape wanted and Boston wanted.

Here too, was the sailor's schooling. Seamen by the hundreds, rather by the thousands, got the stern training which enabled them with small change of habit to pour their experi-

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PROVINCETOWN DOCKS WHEN THE TIDE IS OUT

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ence and their daring into the early navies of America.

Whale fishing came in at an early date, along with the mackerel and the cod, and was in like fashion subject to the restrictions of Colonial law. The first voyagers regretfully saw fortunes slip away from them as the whales frolicked in the Bay and their ships were as innocent of harpoons as they were of small boats, and small hooks for the lesser game of the sea. But they atoned for early unpreparedness, and the history of New England whaling in its later thrills and greatness, began in Truro, developed in Wellfleet and then centered in Provincetown. Thence it extended across Nantucket Sound and Buzzards Bay to Nantucket and New Bedford.

It was a public duty in Plymouth, an obligation resting on every citizen, to watch offshore for whales. If a whale was sighted a boat was at once launched to attack. A "whaling ground," or reservation for watching, was set apart on the "North shore," which was in the northwestern part of the present town of Dennis. As time went on this watching did not bring returns, for the whales were leaving the Old Colony shores, made shy, perhaps, and learning through some sort of animal wisdom, that there was greater safety in the

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remote and open waters. Only two or three whales were caught near Cape Cod in the year 1746.

Thoreau, like other good travelers, read all he could, before he went. In the scattered literature of the old Cape, the drift whale and the minister's un-whalelike salary had stirred his ready capacity for the ludicrous, and he gives us an indelible portrait of the poor clergyman eagerly scanning the sea from his perch on the shore. The minister was not the only beneficiary of the stranded whale; the school received its part also, for school and church and minister all moved on a high level of privilege and honor in the Old Colony.

The drift whale was not, however, turned over as a pure gift of God to heavenly uses. Towns had their rights, and private finders had theirs, and human nature being about at its average, there was much controversy. Sandwich had its full share of drift-whale regulations before the town was twenty years old, and Old Colony riparian rights in 1654 took account of shore owners on whose strands whales were cast up. The whale killing in general became profitable, and, so early as 1687, two hundred tons of oil were exported to England; "one of our best returnes."

The blackfish is a small whale which runs

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in schools in the Bay. A hundred or more of these creatures may strand themselves on the beach, and in the older days there was a rush of men and boats, if a school was sighted, to drive them to shore, for the valuable oil that their heads, or some part of their heads, afforded. They are not sought now, and their coming uninvited imposes the burden of towing their cumbersome carcasses out to sea, lest their decomposition make existence intolerable on the strand. Blackfish Creek in Wellfleet has received such a visit in recent years, and the sands at the approach to Provincetown, where seventy-five of these unwieldy bodies lay on the beach, ranging in length from six to twenty feet or more.

Sharks are not unknown on Cape Cod shores, though none were seen there during the season not long past when some lives were lost on the shores not far to the south. Freeman records the existence of shark-fishing at Race Point, where as many as two hundred were taken in a single year.

The last two centuries have seen each a great development in fishing in the Old Colony. The earlier growth reached its height about the opening of the Revolution when more than a thousand ships swept the waters and more than ten thousand men were engaged. These

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ships and these men took a great part in driving the French power from the American continent, and then, smarting under measures of repression, they took their part in the victory over Great Britain.

At the time of the Revolution, Marblehead was the foremost fishing town and Gloucester followed in its wake. Plymouth and Chatham were the Old Colony centers, Plymouth having sixty vessels and over four hundred men, and Chatham about half as many of each. In 1783, however, at the close of the war, Chatham had only four or five fishing craft, but of sorrowing mothers and lonely widows the town was full.

The Plymouth fisheries likewise were small at the time of peace, but by the year 1800, seventeen years later, there was a good measure of revival. Cod, mackerel, and herring were caught, two miles of the Plymouth shore were lined with marks of the enterprise, while Spain, Portugal, and the Atlantic Islands afforded the markets.

Provincetown had more than thirty vessels in 1802, and the sailings reached as far as Newfoundland and Labrador. At the same time Wellfleet had a goodly fleet in the cod, mackerel and oyster trade. Duxbury also was engaged in codfishing and in building ships.

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In the recovery of fishing after the Revolution, Plymouth held third place from 1786 to 1790, Marblehead and Gloucester being in the lead.

The future of fishing on these shores was, however, by no means assured in those years, for in 1789, Fisher Ames found it necessary to champion this industry of New England, lest it go down to ruin. Answering the hypothetical question—"Why, if the business is so bad, do they not quit it?" he quoted words often said in the East in those days, of the people of the Cape, "They are too poor to live there, and are too poor to remove."

That the Cape fishermen did not stick to their nets and hooks is asserted over and over by McFarland in his history of the New England fisheries. There was little movement among this class to lands beyond the Alleghenies. Rather did they hug the sea, and seek out the recesses of the fiorded coasts of Maine, of the Gulf of St. Lawrence, and of Labrador.

The next great expansion and decline took place in the nineteenth century, and it went together with the wide distribution of shipping among the New England seaports, both great and small. The Plymouth district, which took in not only Plymouth, but Kingston, Duxbury, and Scituate, averaged almost seventy ships

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engaged in codfishing after 1816, and this condition endured for half a century, or until about 1866. Plymouth had her mackerel trade also, but for a lesser time. Thousands of barrels were taken in 1830, but the business had subsided by 1850.

Wellfleet had a large mackerel fleet, beginning in 1826, and employing seventy-five schooners as late as 1860, continuing also for years after that date. During a similar period, there were large interests in whale, cod and mackerel in Provincetown. All through the middle of the century, Chatham, Dennis and Harwich developed in mackerel as the cod fell off. Chatham lost her codfishing when her harbor became shallowed with silt. The larger ships could not use the port, but the smaller mackerel boats continued to come and go. Mackerel were first caught for salting in 1818, having previously been mainly used for bait.

There was great decline in New England fisheries in the quarter of a century following 1850, especially in offshore fishing. With this decline was largely lost the nursery of our earlier navy and the foundation of our merchant marine. There were various causes of the falling off in New England. Middle Atlantic oysters were going to the Mississippi

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FISHING STRAND, CHATHAM

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valley. The Great Lakes had to be reckoned with for they were putting large supplies of fish on the markets of the interior. Salt fish from New England could not hold their place on the Pacific Coast when the western home waters abounded in halibut, and ran red with salmon. The railroads and cold cars at first helped the New England industry but later overwhelmed it with the competition of remote waters. Sardines and canning factories on the Maine coast did their part in cutting away the market for cod and mackerel.

No small influence in the waning of fishing was the upgrowth of summer life on the shore. Who knows now that Bar Harbor in older days was just a fishing station? The fishing hut has surrendered to the summer home, while the fisherman serves the visitor, gives himself to inshore fishing, and watches his lobster traps. He is content to leave the deep seas, for rowing a dory or driving a motorboat on sunshiny afternoons.

An elderly gentleman of a quarter of a century ago, long absent from the Cape but never losing his love of it or his devotion to his native Wellfleet, has given other reasons for the changed life of Cape Cod. According to him, one element in the change was the breaking-up of the old salt industry. The decline of

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mackerel fishing was hastened by the desertion of the coast on the part of these shy fish. Seines were introduced, and this had the interesting result that only men could be employed. There was little further use for boys, who can handle lines but not nets, hence the boys left the Cape.

There was also much unemployment in the winter and spring. Even good and able young men could not get work, and the consequent loss and unrest turned their steps inland. Not to be forgotten also were the dangers of the sea. The hazards of fishing, and the hundreds of widowed women left prematurely in their lonely struggle, made the young women loth to marry seamen, a reluctance in which their parents fully shared.

Thus we come down to our day, and on the Cape one hears a good deal about mackerel and very little about cod. The mackerel is first in the public eye mainly because of much legislation. About 1911, the mackerel industry did not show one tenth the value of twenty-five years previous. Still there were great possibilities, this being the mysterious fish of the sea, coming and going by age-long instinct, causing poverty in one year, and bringing riches in the next.

One who has read Thoreau's story of Prov-

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incetown will doubtless keep the codfish in his memory after all else has been forgotten. The codfish is entwined in the older history of Barnstable County, and is memorialized in the name of the Cape. Our historian of the fisheries has put into a single paragraph an epitaph of the cod which should be denied to no reader of Cape lore.

"Of all the fish of the sea, none is dearer to the heart of the New Englander than the codfish. History has claimed it for her own, and thrown a halo about its name. For years the cod held supreme sway over all others of its kind. This was due to no sentiment arising from historic associations. The life of the colonist was staked upon the economic importance of the codfish. The Revolution witnessed a struggle in diplomacy in which the codfish was the central figure. Our war for independence, upon the sea, was won by codfishermen from the Capes and Banks. The cod tells 'of commerce, diplomacy, war; of victories won in all three fields.' While the cod occupies so completely the foremost place in our fisheries until the second war with Great Britain, there arises in the more recent history, consideration for other fish."

We are not to suppose that fishing has passed from the Old Colony. There are no

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ports on the inner or outer shores where one may not find some signs of it. Docks are decaying, boats are small, and fishermen are few, but they are there, and will be there as long as salt water is an abounding home of living things.

But fishing is specialized and localized, and no longer is the chief occupation or the consuming thought of the majority. Looking out from Provincetown or Truro, Wellfleet or Brewster, one sees structures that look like light stockades, in the shallow waters. They are the fish weirs, and one may wade out to the fisherman's small craft in the early morning and go to the drawing of the net. The catch is large or it is light, but the shining mackerel will be a part of it, with butterfish and hake and other kinds about which the landsman knows little. Pretty surely there will be some squid, which are sold for bait to the offshore fishermen, and some huge flat skates, which rather cruelly will be pitchforked into the Bay for the gulls to quarrel over. The catch is often small, but it may tax belief, as when four hundred barrels of mackerel were snared in a single weir not many years ago.

The weirs at Brewster are shaped like a shepherd's crook. The fish run out with the tide along the shaft of the crook, and run into

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the hook. The tide here leaves about two miles of the Bay bottom bare, and the fish rarely find their way out of the weirs. They are carried out in wagons, and sent by train to Boston.

One sees a number of large buildings on the shore at Provincetown, which have been erected in recent years, as the older fishing habits have passed away. They are the refrigerating plants, of which Provincetown has several, and North Truro, Yarmouth, Barnstable and Chatham each one. They may receive the catch of the weirs, or such cargoes of offshore fish as do not go to Gloucester or Boston.

Another sign of the fishing industry has just now appeared. To the apprehension of Provincetown, as it would seem, the selectmen of Truro have permitted the construction of a factory for fish waste on East Harbor, close to the dunes which environ Provincetown. Here the fish waste may be transmuted into fertilizers and oils. Who knows but the factory, proving possibly a better scavenger than the gulls, may turn out a boon rather than a curse to the surfless strand of Provincetown?

The cod and mackerel are at home in the salt waters and they stay there, though they roam widely. The herring has a different notion of existence, and varies its program with incursions along any thin line of fresh water

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which will conduct it to lake or pond, in the months of May and June. The herring has attached its name to a number of these inland waters on the Cape, and does not allow itself to be forgotten in the routine of the seasons. One would not search far in the records of the towns, or attend many sessions of some town meetings without finding interesting records, now and then of stirring contests over herring rights and privileges.

The outlet of the noble lake of Mashpee is a swift-running brook, narrow enough to jump. Below the road that crosses the brook a short distance from the lake were piled two hundred barrels of salted herring, baking harmlessly they said, in the August sun, while they awaited the sending to market. There was a platform with planks on edge for a rim and into that enclosure the net dumped its holding, after spanning the six-foot channel.

So congested is the run that a parallel channel was cut a few feet away to afford a double chance at the throng of herring, hurrying up to the big lake. And a short distance below on this brook, which is Mashpee River, were more hundreds of barrels, a thousand in all on the little stream making a single season's catch. Any resident of the town has the right to catch the herring, except when, as is not uncommon,

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the town authorities farm out the herring privilege for the general profit.

When the Cape Cod Canal was put through, it virtually replaced the Monumet River. What is left of the upper stream runs from Great Herring Pond, in Bourne, into the canal. The granite blocks on the canal borders hindered the coming of the alewives and injured the fisheries. A correspondence opened in 1917, led to the joint action of the Canal Company, of the Town of Bourne, and of the State Commission of Fisheries and Game, by which a suitable fishway was constructed between the canal and the river, thus restoring favorable conditions.

The freshwater fish of the Cape, while in no sense affording an industry, have since Daniel Webster's day, and no doubt long before, given ample sport to lovers of the rod and line. Trout and bass still love the pure waters of the Old Colony lakes and streams, and some stocking of the ponds is said to be undertaken by the Fish Commission at Woods Hole, and there is a hatchery in Sandwich for stocking with brook trout and the landlocked salmon.

Something more may be added concerning that kind of fishery which so far as New England is concerned has gone into the past, and is already by most forgotten. Tower, in his

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history of New England Whaling, quotes Thatcher's history of Plymouth regarding the early settlers' doubts about staying on the Cape. One of the main reasons for staying was the opportunity to fish, for "large whales of the best kind for oil and bone came daily alongside and played about the ship."

Secretary Randolph, in 1688, sent a letter to England in which he said, "Now Plymouth Colony have great profit by whale killing. I believe it will be one of our best returns, now beaver and peltry fayle us." Down to 1700 no town outside of the Old Colony, except Nantucket, was taking whales, and Nantucket was a disciple of the Cape in this industry. The whaling always began with drift whales, and this led to boat whaling, a fact true of the Massachusetts settlements, of Nantucket, and of the eastern end of Long Island. A Nantucket whaler, blown out to sea in 1727, encountered sperm whales, and this event broadened the industry from drift and boat whaling and sent the whalers to the deep. The *Boston News Letter* of 1727 refers to the change from shore to open sea as having now come to the Cape towns, thus following in a few years the new example of Nantucket.

By 1737 Provincetown was fitting a dozen ships for the far northern waters of Davis

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Strait. This enterprise took from the end town of the Cape all but about a dozen of its men. Whaling continued on the Cape to the Revolution, at whose beginning Wellfleet, Barnstable and Falmouth had thirty-six vessels, mostly in northern waters. New Bedford appeared in the industry not more than fifteen years before the Revolution.

The business was about destroyed as was other fishing at the end of the war, and the towns were well-nigh bereft of vessels and of all other equipment. The whales, however, had had a rest, had grown more numerous and more tame, and there was some revival in which Wellfleet and Plymouth had a share. There was, however, no complete recovery until the War of 1812 had passed. Then growth began, coming to its height in the forties, with about six hundred vessels in the Atlantic, Pacific and Indian oceans.

After 1830 regular fleets went out from Falmouth and Plymouth, Provincetown coming in strongly somewhat later. Since 1895 Boston, New Bedford and Provincetown have been the only ports at which even a remnant of whaling survived. Some readers would like to know the years of last sailings for whales from the various Cape towns. Here they are—Barnstable, 1846; Truro, 1852; Falmouth,

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1859; Sandwich, 1862; Wellfleet, 1867. In a short quarter of a century the Cape lost all its whaling except from Provincetown.

In 1906, New Bedford had twenty-four ships, San Francisco fourteen, and Provincetown three. Six whalers are even at the present time assessed in Provincetown, but they fit out and land at New Bedford. The Civil War, like the wars of 1776 and 1812, broke up the whaling in destructive fashion and the mineral oil of Pennsylvania assured the end.

The seas are vast, and they so abound in life that we stop with our conservation ideas at their borders. Yet we have seen how even the whales profited by something like a closed season, widely as they roam and feed and multiply. But conservation is needed at the shoreline, and this is the burden and cry of those who report each year to the Commonwealth of Massachusetts on the state of the mollusk. It is all summed up in the phrase, "the fast-declining shellfish industries."

Cape Cod is the dividing line between the northern and southern types of marine life. Here the two faunas mingle, and hence it is that on the Cape the northern or soft clam and the southern hardshell clam or quahaug overlap. The bays and estuaries of the Cape, like those of the rest of Massachusetts, are

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favorable for these edible shellfish, but thousands of once productive acres are now barren.

The official writer thinks that the forefathers who evinced such comfortable satisfaction in "sucking the abundance of the seas" were extremely wasteful. The production, indeed, was twice as much in 1907 as in 1879, but this does not mean an increased natural supply. It does mean that high prices took more men and more money into the work, conditions which can but hasten the process of destruction.

One writer cites specific cases of decline on the Cape, as of the oyster at Wellfleet, the sea clam at Dennis and Chatham, the scallop in Buzzards Bay and at Barnstable, and the clam and quahaug on many Old Colony shores from Duxbury around to Buzzards Bay. The order of shellfish departure is simple, and unless ample things are done, inevitable. It is heavy demand, then over-fishing and decline. A further means of destruction is the pollution of shore waters with sewage and factory waste.

Plymouth is the northern limit of the hard-shell clam or quahaug. The largest fisheries on the Old Colony coast are at Wellfleet, Orleans, Eastham and in Buzzards Bay, but there is a decline almost everywhere. An evidence of the waning of the industry is the

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employment of sixty-foot rakes, to raise the bivalves from that depth of water. The small sizes, or "little necks" are taken because the market demands them, the big ones are not left for spawning, and so the destruction goes on.

The adoption of cultural methods, or "quahaug farming" is urged as the remedy, and the town laws in the quahaug centers now look in this direction. High-power seine boats are now used off Orleans in the deep water quahaug fishing that prevails in that shore. The main season runs from April to November, and fits itself to the winter season of taking scallops.

Those who are devoted to some special corner of the Cape will find in the reports of the game commission the hard-clam story in detail for every town, including a half-dozen pages on Wellfleet, the "seat of the finest quahaug industry in Massachusetts," there being twenty-five hundred acres, nearly the whole harbor, save where there are oyster grants. Here the laying out of the plots is said to have aroused the usual hostility between the oystermen and the quahaugers.

Scalloping is a southshore industry on the Cape, centering mainly in Chatham, Harwich, Dennis and in Hyannis Bay, and Cotuit in

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the town of Barnstable. Buzzards Bay, Monument Beach and Cataumet are other haunts of this graceful bivalve. Dennis has over two thousand acres of scallop ground, a field which is likely to produce in one year and be barren the next.

In 1904–05 Dennis had, so one reporter says, one of the largest beds of scallops ever known in Massachusetts. Profits ran high and expectation likewise, but the next spring all the leftovers of this short-lived creature were dead and the catch of that season had to be dredged from deeper waters.

The oyster business is carried on with more system and greater success than the other shellfish ventures. It is also a southshore industry on the Cape and, indeed, in the State of Massachusetts. Exceptions on Cape Cod are the oyster grants of Wellfleet, Eastham and Orleans.

In early days there were many natural oyster beds, as at Wellfleet, where the primitive settlers found enough for themselves and for some outside trade. A few native oysters are still found in Harwich, at Centerville and in Falmouth. No natural oysters, however, are in these days secured for market use. The destruction of these beds was due to overfishing and the pollution of the waters. The natu-

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ral bed at Wellfleet was exterminated by the year 1775. The early oystermen took all the large oysters, leaving none for spawning, and they did not restore to the beds the empty shells, which furnish the best surfaces for oyster "spat." The few natural beds which are still in existence, are preserved through spawn from oyster grants, and hence it is confidently believed that the adoption of a farming system has saved the creature from absolute extinction in Massachusetts waters.

Following the period of natural oysters which lasted from 1620 to 1840, there was an interval of thirty years of bedding small oysters brought from the South, but the grant system has prevailed since 1870. One of the chief Cape centers is at Wellfleet, yet even here the industry is on the decline. The quahauger, it is claimed, is busy in town affairs, and is opposed to renewing the oyster leases when they run out. Indeed Wellfleet supports a quahaug club, enrolling about all the diggers of this mollusk. Poor, quiescent oysters and clams—they are set against each other by that higher order of being who in his ascent has lost their gentle art of minding their own business.

Chatham goes considerably into oyster raising, but the great oyster town of Massachu-

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setts is Barnstable, whose oyster grounds are at Cotuit, Marston's Mills, and Osterville, Cotuit being first in importance. Here the Bay is said to have remarkably pure waters, and a clean sand bottom, producing a specially bright and clear shell. There are small grants in Falmouth, in Waquoit Bay. This town does not, however, go far in any of the shell-fish industries.

Unlike the oyster, or quahaug, the soft-shell clam, or "long neck," dwells along the northern shores of Massachusetts, and is found all the way from Salisbury and Newburyport to Salem, Hingham, Duxbury, and Plymouth, and around the Bay to Provincetown. It also occurs in Buzzards Bay and on some south shores of the Cape. Its story is likewise one of decline, although immense fields of tidal flat invite an industry that has almost ceased. Much the same is true of Kingston and Plymouth, where in early days the sea food saved the colonists from perishing.

The Virginian cannot forever raise tobacco on the same bit of coastal plain, and the prairie farmer finds an end of wheat and corn from unrequited soil. Even the vast and elusive sea must be treated with discretion. No doubt the Cape Codder will continue to dig a pail of clams for his supper, and the picnicker will for

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long be able to buy, down by the harbor, a basket of oysters in the shell for a roasting bout by some lake in the Wellfleet woods. But when he goes in for business, the Cape fisherman, like the Cape farmer, must put his wits into the game and work and forecast in the long range.

Conserve and be mindful in good conscience of future generations. They will want oysters and quahaugs, mackerel and cod, and they may need even whales. The *Mayflower* fathers could suck the abundance of the seas but their children proudly looking over their genealogies in the eighth and ninth generations must mind their soils and their sea bottoms. It is a delicate task to live well in relation to the earth mother and in due regard for all her children.

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CHAPTER VII

ROADS AND WATERWAYS

CAPE COD is neighborly to the beaten tracks of the ocean. Nobska Light is on the south shore at Woods Hole. Here converges the coastwise traffic of Boston, New York, and the South, here come ships from Buzzards Bay and the Canal, from Nantucket Sound and the outside of the Cape, from Long Island Sound—thirty thousand of them in all, passing the light in the space of a year. The joy of the cliffs of Truro is in the solitary grandeur of the ocean, but that joy is tempered, humanized, and made kindly, the solitude is broken, for one sees sails by day and lights at night—fisher craft, freighters puffing through solitary funnels, and a mile of coal barges, three, sometimes four, spaced a thousand feet or more, following a tug whose power seems out of all harmony with its size. The barges are high on the water, going south, or with hulls deep down, aiming their black cargoes at Boston, Salem, Newburyport, Portsmouth, or Portland.

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Ships are few at Plymouth. One may look out all day over the rock, seeing only a few diminutive fishermen, a motorboat, a chance yacht of some wealthy pleasure seeker, and, if in summer, the daily excursion steamer from Boston. The look of things is more ocean-like if one goes down the Cape to Provincetown. Fishing was small at Plymouth and out of fishing grew the larger trading life of the Cape. Plymouth stayed by its agriculture and developed its manufactures down to our day. It has never been so thoroughly mixed with the ocean as the narrow and exposed foreland which springs from it.

Sandwich, the basal old town of the Cape, is somewhat like Plymouth, and is said to be less maritime than any other town on the Cape. Surely a look at her desolate water front makes it easy to believe it, and there is evidence enough that manufacture ruled in the past as farming and summer resting to-day. Yet there was at one time some shipbuilding here. And Sandwich is credited with the first packet running to Boston, a service maintained for many years, until the venerable town saw its first steam cars in 1848.

Woods Hole, let it be remembered, provides Falmouth with that town's most important harbor, a haven not situated to favor Boston

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trade, but a central shipping place for New Bedford, and the outer islands, wood for Nantucket having loaded many a boat from its docks. Falmouth had, nevertheless, a worthy share in the wide trade of the older days. Sixty vessels were owned there in 1800, and their sailings reached, for fishing and the coasting trade, such remote regions as Belle Isle, the Southern states and the West Indies.

It is quite within the range of possibilities to look out over the broad surfaces of Barnstable Bay, and in some hours not see so much as a rowboat. A century has made a complete change in Barnstable's mode of life. The old town once had several shipyards in which Boston packets were built. There were frequent trips between the Cape capital and the State capital in 1806, and there was little besides marine activity in 1839, the time of the bicentennial celebration. There were two hundred and fifty of Barnstable's citizens who were at that time either masters or mates of vessels.

The Bay State's honored jurist, Chief Justice Shaw, at the Barnstable celebration, looked out on Sandy Neck and called it "a range of sterile sand hills interspersed with a few patches of brown woods and swamps, and surrounded by marshes." But to the Cape

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Cod man what is suggested?—the "ocean that lies beyond, the field of his industry and enterprise, of enjoyment and improvement, even of social and intellectual improvement, connecting him with all lands, art, knowledge, refinement, civilization. The land and the sea are alike fertile to those that have the hardihood, the skill, the enterprise to improve them, and the hearts to enjoy them."

Such is the glory of Barnstable's history, but a new chapter is in the writing to-day, less arousing than the older story, more in the fields, and the end not seen. It is half a century since Barnstable retired within herself, for the great traffic had ceased at the time of the Civil War.

Every town, going farther out on the Cape, was through and through marine. None of them needed any solicitude, as Thoreau expressed it for himself, about "getting the sea into" them. Yarmouth, Dennis, and Brewster all front on the innermost corner of the Bay. None of them have harborage to boast of, but what they had was suited to the modest craft of the old time. These little havens were never idle. Dennis had in 1837 a hundred and fifty skippers sailing from American ports. And Dennis had been running boats to Boston almost a hundred years at that time.

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THE VOYAGE IS ENDED

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Yarmouth had her regular Boston packets before 1800, but their traffic was at an end in 1870.

One wonders if Brewster's slumbers are ever broken after the summer automobile has run its course. Innocent of smoke or factory, setting a few nets in her fish weirs, and living in gracious old mansions, under magnificent arborescent growths in that poor land in which "trees do not flourish"—something has happened in Brewster, or has ceased to happen. The time is no more when she had more sea captains on foreign voyages than any other town in the United States. No doubt, those foreign voyages account for the mansions. None would dispute Freeman who says that Brewster was noted for shipmasters, having not much fishing but vast coasting and foreign trade, and adding an observation which if not startling is safely veracious, "one of the most agreeable towns on the Cape."

All of Harwich's ocean contact is on the south shore, but the town had shipping enough to cause someone to assert that her retired sea captains were as thick as cranberries. If, as we suppose, the cranberries of Harwich were intended, no more could be said.

Even more fully absorbed by the sea, were the outer towns. In Orleans the land was

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tended by old men and small boys, all between the ages of twelve and forty-five being occupied on the sea. Adjoining Orleans is Eastham, whose asparagus fields and coast swamps offer no hint of ships, yet the town boasted coasters that in summer brought lumber from Maine and in winter voyaged to the West Indies. Both Orleans and Eastham shared in the useful traffic of delivering Cape salt on Boston wharves.

Chatham was less favorably placed for the Boston traffic, which she maintained mostly by inside routes through Brewster and Orleans. Chatham was well situated for Nantucket and New Bedford trade and ran boats even to New York. Wellfleet and Truro could not escape their shipping destiny, while the sailing ship ruled the seas. The Truro men were especially exposed to sea dangers. All were of that occupation, at home in a narrow land, with dangerous shores, and often lost in wrecks, and in heroic efforts of rescue. There was much traffic with Boston, but the silting of the harbor of Pamet and the decline of fishing ended the business before the railway was extended so far out. Yet in 1830 Truro boasted a schooner whose cabin was fitted with birdseye and mahogany and hung with silk draperies.

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Provincetown did not begin its larger trade until some years after the War of 1812, but has maintained importance as a haven, while all other Cape ports save Woods Hole have passed into quietude. Fishing will always bring some shipping into Provincetown harbor, the navy is likely to use it in times of peace, and sure to come in days of war, and all ships which ply the adjoining waters may take refuge from storm.

The arrival of the packet in the early half of the last century was the excitement of the time, bringing the news, and bringing also Cape sailors whose real voyages began and ended at Boston. There was keen rivalry for speed among the packets of Barnstable, Yarmouth and the other towns. There were packets running before 1800, but the adoption of regular sailings belongs almost wholly to the nineteenth century, coming to an end with the advent of the Old Colony Railway.

The elderly man, already quoted, who had spent his youth on Cape Cod, in a communication of 1897, says that before he left Wellfleet in 1852, he saw at one time eighty sail of the most perfectly constructed vessels of their kind in the world riding at anchor in that port. He returned after forty-three years and looked out from Indian Hill to see the waters as bare

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as when the *Mayflower* shallop passed the position of Billingsgate Light in search of a permanent home for the Leyden Pilgrims. Wharves were decaying, the fishermen's cottages were falling in, and in the town Italian villas and English houses were replacing the old Cape cottages. Truly, in a recent summer afternoon in Truro, on a walk to the ancient cemetery, did the now venerable daughter of a still more venerable sea captain say, "Cape Cod ain't what it used to be; it's going down fast."

The changes of the Civil War threw the young men into other than Cape business. Domestic coast trade took the population to the south shore, small sloops and schooners gave way to large craft, machinery displaced men, and fishing concentrated in Boston, Gloucester and Provincetown. Emigrants poured out to Maine, the Connecticut Valley, the Middle States, the Prairies and California.

Often quoted, but deserving a place in every memorial of old Cape days, no words will ever say more eloquently than these what that far-flung life was. They were spoken by Dr. Palfrey in his Barnstable oration in 1839—"Wherever, over the world, you see the stars and stripes floating, you may have good hope that beneath them someone will be found who

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CLIFFS AT HIGHLAND LIGHT

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can tell you the soundings of Barnstable, or Wellfleet, or Chatham harbor." Another Cape writer cites as suitable to his native shores, Burke's tribute to old Yarmouth on the North Sea—"No sea but what is vexed by their fisheries, no climate that is not witness to their toils."

A shipmaster twenty years ago told a wondering lone passenger of how he must sail by watch and compass the tortuous and rocky course on the return journey from Iona to Oban south of the Island of Mull. But no stern coast was perhaps ever, or anywhere, more hazardous than the sea borders around Cape Cod. There is an average duration of fog on this coast of forty-five days in the year. Anyone knows what this means who has spent weeks or months under the Cape's greatest light and has heard the low roar of its foghorn day and night.

The tidal currents are variable, and the bottoms rapidly change in a region where so much sand is supplied to the waves and readily shifted to a prodigious extent in single storms. There are extensive and dangerous shoals far out and reaching to the Nantucket light ship. Most of the larger vessels go wholly outside of the shoals, and in a long week's time the sojourner at Siasconset might not see a single

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ship, or if he did, more than likely it would be in the service of the United States Coast Survey.

The alternative sailing is through Nantucket Sound, entered or left by a narrow and sharply turning course through the shoals, endangered by fogs and cross currents. No place of refuge is available between Provincetown and Vineyard Haven. No other part of the American coast has seen so many shipwrecks in the past fifty years. From 1875 to 1903 there were six hundred and eighty-seven shipwrecks on or near the Cape. More than one hundred lives were lost, nearly two hundred of the ships were not saved, and the property loss was more than two million dollars.

From 1907 to 1917, there were one hundred and fifty-six wrecks on the ocean side of Cape Cod. If we consider the Nantucket Shoals, the island and the sound, and Martha's Vineyard and its sound, there were in that period of ten years casualties involving two hundred and fifty-five sailing vessels, and seventy-one steamships, or in all three hundred and twenty-six salt-water craft. Here the loss was thirty-two lives, and in property more than one and a half-million dollars. In the single year 1909, on the exposed face of the Cape, alone, there were twenty-two wrecks. About

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the same number of ships met disaster in each of the years 1911, 1912 and 1913.

Means of safety have long been taken, growing in perfection to the present time, though no human precaution can curb the sea or put its dwellers beyond hazard. A lighthouse was erected in Plymouth Harbor about 1770, but for long around the Cape, the sailors had learned by day, at least, to guide their course by hilltops, windmills and the church steeples.

The Reverend Levi Whitman thus wrote to the Reverend James Freeman on the need of a light at the Clay Pounds, where Highland Light now is. "That mountain of clay in Truro seems to have been erected in the midst of sand hills by the God of nature on purpose for the foundation of a lighthouse, which, if it could be obtained in time, no doubt would save millions of property and thousands of lives. Why then should not that dark chasm between Nantucket and Cape Ann be eliminated? Should there be a lighthouse erected on this high mountain, it would be discovered immediately after leaving Nantucket light and would be a safe guide round the Cape into the harbor."

A light was established here in 1797, and since June 12 of that year the beacon has lighted the surrounding waters on every night

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of almost a century and a quarter. The tower rises about eighty feet above its foundation, which in turn is about one hundred and forty feet above the sea. The present structure replaced an earlier one in 1857. Whether looking in the direction of Sankaty Head, or the Boston Light, or Cape Ann, the distance for each is a little more than forty miles. Barring a foggy atmosphere, therefore, the "chasm" of the oldtime clergyman is bridged, and the coastwise mariner would always be able to pick up one of these lights. The light has 182,000 candle power. No other oil-burning light in America is so powerful, and its flashes may, it is said, be seen under favorable conditions, at a distance of forty-five miles.

This major beacon is officially the Cape Cod light, but the local name is used more commonly, at least on the Cape. Other lights followed at short intervals. In 1806, twelve acres at Chatham were given to the government for lights. Race Point light dates from 1816, and the light on Long Point at the very tip of the Cape was set up in 1826. Billingsgate Point, off Wellfleet, in the Bay, once a bit of the mainland, now an island, became the site of a light in 1822. Lights were installed at Nauset in 1838, thus giving a series at short intervals for all the outer Cape shore. In 1849

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HIGHLAND LIGHT

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a light was established in Pamet Harbor, but this was discontinued in 1855, probably on account of the silting of the harbor and the decline of shipping. Wood End light dates from 1873, and other beacons are found at Monomoy Point, Hyannis, at Nobska Point by Woods Hole and at Wings Neck, on Wenaumet Neck in Buzzards Bay.

Lightships also aid the sailor, at Shovelfull Shoal, a little east of the southern tip of Monomoy; in Pollock's Rip, about five miles east of the end of Monomoy Beach; also Bishop and Clerks, three miles south of Point Gammon; and Cross Rip Shoal, south of Osterville and Cotuit.

On an earlier page was found a reference to an old description of those east and west valleys which form a significant feature of the geography of the lower Cape. This description occurs in a fifteen-page pamphlet printed in Marlboro Street in Boston in 1802. It was written by a "Member of the Humane Society," and this public-spirited gentleman was none other than the same James Freeman who received his brother minister's letter about a light at Clay Pounds.

The title of the pamphlet is "A description of the Eastern Coast of the County of Barnstable from Cape Cod or Race Point to Cape

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Malebarre, or the Sandy Point of Chatham." The object of the writing is to indicate the spots on which the trustees of the Humane Society have erected huts and other places where shipwrecked seamen may look for shelter. Various gentlemen of Provincetown and Truro had promised to inspect these huts, and see that they were kept in condition as shelters.

There was but poor chance of a stranded, water-soaked, and freezing sailor finding one of these huts; having to go up the cliffs, often, it might be, in driving sand or sleet, over the moors. Only a few months ago the captain of one of the life-saving stations said to an inquiring visitor that if one of his crew on winter patrol were lost in a night snowstorm it would be useless to go out and look for him until morning.

If the shivering wanderer found the hut, it would be a "rude charity house with fireplace, wood and matches, straw pallet and signal pole." One wonders if the gentlemen of Truro and Provincetown always kept their promise, and if the wood and matches were always there. These dread mischances that were involved in the provisions of benevolent minded members of the Humane Society much interested Thoreau's inquiring mind, and he carries

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his rather weird speculations through many paragraphs which anyone can follow who reads the later pages of his chapter— "The Beach."

All this is changed to-day, and the outer shore is fringed with life-saving stations, nine in all, running from Race Point by Peaked Hill Bar, Highhead, Highland, Pamet River, Cahoon Hollow, Nauset Beach and Orleans Beach to Monomoy station. The first six are within a distance of twenty miles, so that not more than three or four miles is the interval between any two neighboring stations. At each is a comfortable outfit of buildings for equipment and housekeeping. The captain and his crew are their own housekeepers, and very good housekeepers they are. They are all true and sturdy men, and are a part of the naval service of the United States.

Some leisure and much quiet living, they have, which is likely to be broken any moment by a call which puts their lives in jeopardy. But notions of leisure in their task come mostly to the summer visitor, who does see them fight mosquitoes, but does not often see them battle with storm. They launch a lifeboat in the same composure with which they visit their lobster traps, and their patrols meet each other midway between stations, during the darkest and wildest nights, with booming surf, driving

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snow, and that deathly chill of a salty gale for which the thermometer has no measure. If leisure they do have, it is broken by scrubbing and cooking, tending a garden in a nook among the sands, or a call to practice with the cannon, the life line, the cable, and the breeches buoy. In emergency, the telephone brings two or three crews with great speed to the scene of disaster, and a long record of rescue stands to the credit of those heroic men. After a reasonable period of service, for such duty is too heavy for old men, they are retired upon a living pension.

The anticipations of great canals have usually been remote. Those of Suez go back thousands of years, and those of Panama through all the hundreds of the white man's presence in the western hemisphere. In this regard, Cape Cod is not greatly behind Panama. The first sentiment grew out of the trade carried on across the base of the Cape, through the valley of old glacial drainage, between the business men of Plymouth and the Dutch merchants of the lower Hudson.

In 1627 a trading house was built in the present town of Sandwich, by the Plymouth colonists. Goods were carried up the creek from Scusset Harbor to a point within four or five miles of the trading house. They were

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then portaged for a short distance and put into boats on the other side. Thus the trade was spared the dangers of going around the Cape. Whether the goal was the Hudson or the south shores about Narragansett and on Long Island, the trading station was in the future Sandwich but specifically was at Manomet. The Dutch began to bring goods in 1628—sugar, Holland linen and various stuffs—for which at first tobacco was taken in exchange. This trade had assumed quite large proportions by the year 1634.

Governor Bradford had gone to Manomet as early as the winter of 1622–23 and had discovered the facility with which transportation could be carried on between the two great bays, there being a tidal creek on one side and a river on the other, with a portage of but four or five miles.

Freeman refers to an action of the General Court authorizing a survey for a canal between Buzzards Bay and Barnstable (Cape Cod) Bay, to avoid enemy ships and the shoals encountered in going around the Cape. This is apparently the action referred to by Weeden, who says, "in 1697, by decree of the General Court, the Cape Cod Canal was cut, on paper, through the land at Sandwich, from Barnstable Bay, so called, into Monument Bay."

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There is an interesting journal of a survey made in 1791, for a canal across Cape Cod, by James Winthrop. This gentleman lived in Cambridge, and he tells us that he set out at one P.M., May 12, 1791, with Henry Parker as assistant, to survey Sandwich Neck. He does not neglect to mention that Miss H., "a lovely girl of eighteen, was polite enough to take this opportunity to visit her Barnstable friends, and rode in the chaise with me." The first lodging was at Hingham, twenty-three miles out, where the food was good, but the beds were objectionable. May 13, the party dined at Kingston, and, because of rain, spent the night there. Plymouth was reached May 14 and Sandwich May 16.

After recounting the details of the line of levels carried across the Neck, the surveyor describes a journey to Barnstable to view the ground between Barnstable Harbor and Hyannis. In crossing here, the first mile is high, estimated at eighty feet. There is no avoiding it, the hill being a part of a ridge (the great moraine as we know it) which runs the whole length of the Cape. Mr. Winthrop considers the use of Great Pond and Long Pond, as parts ot a canal, also Hathaway's Pond. He remarks on the view of both seas from Kidds Hill on the return by the road to Barnstable,

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and notes the difference in the amount and time of the tides on both sides of the Cape.

The canal project is said to have been favored by Washington, and various routes were surveyed, including Sandwich, Barnstable and Yarmouth. Wendell Davis, in his "Description of Sandwich" in 1802, refers to two of these projects. The canal, he thinks, would newly create the town (Sandwich), hundreds of dwellings would be built, property increased in value, and good markets provided. Showing us how hard it is to predict the commercial conditions of a future time, he dwells on the "easy transportation of wood, the staple article of business." Warehouses would spring up, and there would be growth of trade between northern and southern states, and life and property would be preserved.

The same writer describes the Neck between Great Pond and Long Pond in Eastham, and observes that "here those who think it is as easy to dig through the land as to mark a line on a map, will be disposed to cut a canal from ocean to the bay." It is singular that this plan should have been seriously considered. The dangers around the north end of the Cape would have been avoided but not the shoals, the hostile ships, or any great share of the extra distance. This project lived on, for in

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1817 the "Eastham and Orleans Canal Proprietors" were incorporated to open a canal from the head of Nauset Cove to Boat Meadow Creek. This was on the line already described as Jeremiah's Gutter.

In 1860, at the suggestion of the governor of the state, the canal project was revived, and the advantages were believed to be superior to those to be gained by tunnelling mountains. Hoosac Tunnel was then under construction and long years before it had been proposed to tunnel the Hoosac range for a canal. This was prior to the railway era in the Berkshires.

The Cape Cod Canal as finally constructed follows the only route which, as it would seem, was ever open to serious consideration. While operated by the government during the war, and now under agitation for federal ownership, it was dug and is still owned by private capitalists. It was opened in April, 1916, to vessels drawing twenty-five feet of water. The canal is wholly at sea level, and has no locks. The canal proper is 7.68 miles in length, but the approaches had to be dredged, so that it is scarcely an error to say that the canal has a length of thirteen miles. The bottom width is one hundred feet, making the waterway, until further widened, a one-way canal. About

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THE CANAL

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twenty or twenty-five million tons of coastwise shipping have passed each year around the Cape. With widening to two hundred feet at the bottom, the ditch would, it is thought, accommodate about ninety per cent of this traffic. Such a result is hardly to be expected without government ownership and the abolition of toll charges.

The advantages of the canal were in substance foreseen by the fathers, who, however, could not look forward to the submarine attack which startled the Cape dwellers at Orleans in the summer of 1918. This piece of inside route, coupled with other proposed inside water lines to the southward, will give astonishing savings of distances between Boston and such ports as New York, Philadelphia, and Baltimore. There would also be great saving of time, not only proportional to the shortening of distance but through the avoidance of delay on account of storm. Larger cargoes could be carried, and the charges for marine insurance would be diminished.

The Cape Cod Canal alone results in saving from sixty-three to a hundred fifty-two miles for ships moving from any ports between New York and Providence to ports north of the Cape. The New York and Boston boats now pass through the canal, and have thus reduced

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their time from sixteen or eighteen hours to thirteen and one half hours.

Both to those who live on the Old Colony shores and to those who visit them the land way has become far more important than the water way. Where hundreds go by the sea, and this only in the summer, thousands go and come by train and motor throughout the year.

Plymouth and Sandwich were both in early days presented before the General Court for not having the country road between these places so cleared as to be passable for man and beast. For long the pioneers of Sandwich took their grists to the mill at Plymouth on their backs or on those of a horse, a bull, or a cow. Other towns as well as the two oldest received imposition of fines for tolerating bad roads. A jury of twelve men was appointed in 1637 to lay out roads about Plymouth and Duxbury.

Rich in his history of Truro says that going to Boston by land from that part of the Cape was less common than a voyage to China. All went by packet but in early days there was no schedule. To ride to Boston by stagecoach in 1790, even from the upper parts of the Cape, required two days. This route was used only when bad weather prevented going by packet.

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There were widely traveled men on the Cape who had never journeyed to Boston by land. About 1720 a country road was laid out, forty feet wide, from Harwich down the Cape to Truro. This could not have been a good or permanent highway, for Freeman records an effort in 1796 to secure a post road to the end of the Cape.

About fifteen years later President Dwight describes the road from Truro to Provincetown as heavy with sand, but good on the beach at low tide. Thoreau, apparently on his first visit in 1849, reached the terminus of the railroad at Sandwich and took the stage, which seemed to him then almost obsolete. He was told that all Cape roads were heavy, and he nowhere denies that he found them so. He describes the road going down the lower part of the Cape as a mere cart track, deep in sand and so narrow that the wheels often brushed the shrubbery. No searching is needed to find scores of miles of such roads, if one even now departs from main lines. It is a mazy task in some of the forests to identify one's position even with the government contoured map in the hand.

The Cape Cod Railroad, extending from Middleboro to Sandwich, was incorporated in 1846 and opened in 1848. It joined the Fall

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River and Old Colony railroad, and in 1854 was built as far as Hyannis. Extension was made from Yarmouth to Orleans and opened in 1865. Northward from Orleans the road was built by short stages and reached Wellfleet in 1869. The line was carried through to Provincetown in 1873. The various branches became the Old Colony Railroad in 1872, the year in which Woods Hole was joined to the system. The Chatham branch dates from 1887.

The Boston packets ceased to run in 1871. In place of their rival speeding and ancient sociability the railway had come in, the stages having already ceased to drag their toilsome way through the sands. Provincetown was slow to raise itself out of the sand. Only one horse—having one eye—was there in 1829. The first plank walk was laid down on the long, curved street in 1838, its construction not being accomplished without strenuous opposition.

The advent of state roads, the arteries of the summer Cape, is recent. A double system follows the north and south shores, with several crosslines. A trunk line from Chatham to Provincetown follows the direct road from Boston, from the junction at Orleans, to the lower end of the Cape.

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It will aid the eyes and understanding of some to follow the roadways in their relation to the land forms. It is a curious fact that the railway line from Boston southward along the shore stops at Plymouth. There is no public line of transportation leading along the first main track of Pilgrim travel to Bourne and the present village of Sagamore. The scheduled transport runs the roundabout course by way of Middleboro, Wareham, Onset and Buzzards Bay.

From Buzzards Bay to Woods Hole the railway follows the west fringe of the moraine, usually in view of the islands, beaches and spits of the Bay shore. It crosses the belt of hills diagonally to Falmouth village at its eastern base, and then runs through the southern end of the moraine to Woods Hole.

From Buzzards Bay eastward the railway follows the old Monument River, now the canal, and from Sandwich to Yarmouth is in the hills of the northern edge of the moraine. In many places these hills, lying north of the railway, shut out the Bay from the traveler's view, but much may be seen of the salt marshes and bordering dune beaches. These obstructing hills appear, on nearing East Sandwich, and from West Barnstable to Yarmouth.

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The spur to Hyannis, only about four miles in length, crosses a low place in the moraine for about a mile and at Yarmouth Camp Ground begins abruptly to traverse the outwash plain to Nantucket Sound. The main line after leaving Yarmouth also crosses the moraine to a south-central position as far as Harwich Station, and then turns north into the moraine from Harwich and Brewster to Orleans, and northward runs through a field of morainic hills and lakes about Eastham Center.

Northward the railway crosses the Eastham plain to South Wellfleet, from which it rises upon the back of the high Wellfleet plain northward to North Truro. In Truro, by the Provincetown waterworks, the road descends to the beach, which it follows until it enters the dunes of Provincetown.

A main line of highway joins Duxbury, Kingston, Plymouth and Sagamore. Two main lines, as above said, follow the upper Cape. The northshore route is much like that of the railway. Both run south of certain morainic elevations that are north of the principal belt of hills. These are—Town Neck in Sandwich, Spring Hill near East Sandwich and Scorton Neck.

At Yarmouth Port this road keeps near the shore through the towns of Yarmouth, Den-

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nis and Brewster, and then follows nearly a middle course between the inner and outer shores to Provincetown. From Wellfleet to North Truro it is well hidden from both sea borders, winding among the hills, pine forests and lakes of the northern wilderness.

The southshore route pursues its way around the heads of the deep bays of the outwash plain through Falmouth, Cotuit and Marston's Mills to Hyannis, thence to Chatham nearer the shore. From Buzzards Bay to Woods Hole, the description of the railway route is equally true of the highway.

For nearly a hundred and fifty years the colonists had to depend on chance travelers for sending letters. In days that still were early, a postrider took the whole mail in his saddlebags and they were lean at that. He required a week for going down the Cape and accomplishing his return. The first regular mail was established in 1754, between Plymouth and Nauset. In 1775 there was a route from Cambridge to Plymouth, Sandwich and Falmouth, a round trip occupying the days from Monday to Saturday. The first United States mail was sent from Boston to Barnstable in 1792. The pay of the carrier was one dollar per day, which was criticised as an extravagant use of the public money.

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The first post office in Yarmouth was opened in 1794, with mails once a week and no post office below it on the Cape. In 1797 there was a weekly mail from Yarmouth to Truro, but it was not thought worth while to extend the service to Provincetown. The period of the second war with Great Britain saw mails carried down the Cape twice a week, a third mail being added a few years later. In 1854 Yarmouth had mails twice each day.

Telegraph wires began to be strung on the Cape in 1855 and even rival lines were not long in being set up. The Cape has had its share in Atlantic cables and wireless flashings, and the aeroplane sailed over with the coming of the war. The isolation of the Cape has passed away, and the hotel keeper phones in his orders to Boston, and the motor truck and the express car are in the land. If the old foreland was ever asleep, which may be doubted, it has awakened to the modern call. None can predict when flight will put Truro and Chatham among the suburbs of Boston, when Old Colony trains will cease to run uphill and downhill, and the Dorothy Bradford will find undisturbed repose.

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CHAPTER VIII

THREE CENTURIES OF POPULATION

THE problem of population ties itself up in endless complications. Soil and mine, harbors and highways, world position, human invention and duration of occupation are all involved. The wealth of the soil is much but can hardly be said to control. If one doubts this let him think of the United Kingdom, or of Belgium, or the States of Massachusetts and Rhode Island, none of these raising more than a fraction of its food. Other resources count, particularly if there be stores of coal and iron, and other materials which invite hand or machine craft. Situation, harbors and roads may be such as to favor trade. Thus all resources and conditions have a share in determining whether the people will be scattered and few, or compact and many.

One might compare the United Kingdom and Norway—about equal in square miles—with forty-five million over against two million of human beings. Perhaps the Norwegian

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is as enterprising as the Briton, and he has plenty of harbors and a fair situation. But there is not much underground material that is useful and hardly a decent county area of good soil in the whole kingdom. The Orient is different, with dense population, rich soil, and little manufacture save of simple home necessities. Natural wealth is large, but except as to soils, is little used, while the age of these countries makes western Europe look young.

The development of the Old Colony is favored or hindered by what goes on in New York or the Mississippi Valley. The human factor after all may outweigh the rest—what has been bred into a race, what they bring to their land, may be more than all that their environment brings to them.

The circuit of Cape Cod Bay has its full share of these enigmas. Some things are plain enough—that the soils are poor, that the mineral wealth is almost nothing, and that the situation, so far as the great world is concerned, is good. The harbors used to be good, but human invention has made over our sailing contrivances and made most of the harbors poor, nature helping here and there in the process. The prairies have drawn off the Cape farmer. The trout of the Great Lakes and the

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salmon of the Columbia River have discouraged the fisherman, and the population of the Cape has diminished.

But the Cape keeps its long and glorious shoreline, its air is as pure and life giving as it ever was, and modern skill will make the most of its soils. Then the richer interior, in the summer furnace of a continental climate, bethinks itself of the Cape and goes back to it for something better than wheat, or coal or iron, or any other form of wealth. The Cape has resources after all—will these riches, appealing to the higher needs of a filling continent, build up the old shore towns, occupy the foreland with intensive tillage and send its population curve upward in the coming decades? Such are the questions, but they are not answered here.

The population of Barnstable County had been going down for about twenty-five years, when, in 1896, the Massachusetts legislature provided means for a thorough study of all resources and conditions, in the hope of repeopling this great outpost of the Commonwealth. The result is that a hundred pages are buried in a state document, which tell more about the real Cape than all that has since been written of the land and its people.

Barnstable County went continuously up

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in the number of its people for nearly a century, from the year 1765 to 1860. At the earlier date the county had a little more than twelve thousand inhabitants, and, at the opening of the Civil War, the number had risen to thirty-six thousand. The next fifty years saw an unbroken decline, but the falling off was less rapid than the earlier increase.

The towns have their own interesting stories of rising and falling. Provincetown grew in numbers from 1776 to 1890 and since the latter date has been fluctuating. The town has nothing of much worth in its lands but it does have position, some shipping, a worthy remnant of fishing, the summer visitors, and the artist colony.

Truro grew from 1800 to 1850, and the latter decades of that half-century saw the population rising rapidly. It was the generation that saw the culmination of the shipping and fishing, giving life with the help of well-tilled farms to more than two thousand people. Then the decline set in, to 1910, and another federal numbering will soon tell whether it has gone on until to-day. Marine life is almost completely gone, save for one freezing plant and a few weirs; the use of the land is far less than it was, and the summer industry has not yet made up for lost relations with the sea.

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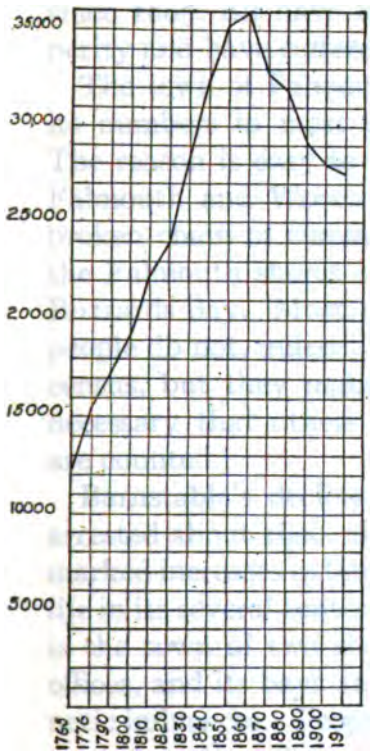
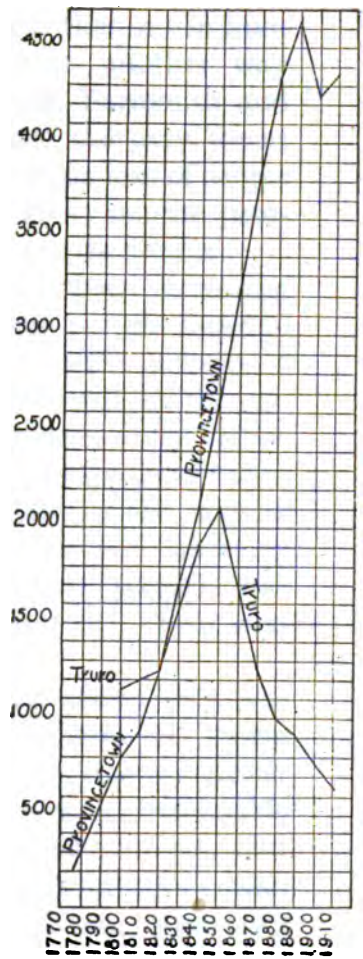


POPULATION OF BARNSTABLE COUNTY



POPULATION OF PROVINCETOWN AND TRURO

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Truro goes with Eastham, Brewster and Mashpee in each having less than seven hundred people. Comparing in another way Truro stands with Chatham, Yarmouth and Wellfleet, for these four are the only towns that have suffered a continuous loss of people since 1865. All have had great marine prosperity and have suffered from its decline.

The town of Falmouth has been increasing its numbers in most of the recent decades. The reason is easy to find, in the villages of Falmouth and Woods Hole, and in the unbroken chain of summer places which follow the Falmouth shores of Vineyard Sound and Buzzards Bay. Most, or many, of the summer people do not, indeed, count in the Falmouth census, but they make it both possible and necessary that others should live there who are counted.

Barnstable's decline from about 1865 was arrested about 1890, and the town has shown marked increases in later years, due to summer life in its several centers of resort. Barnstable is the town of two shores and fourteen post offices, and its bays and lakes have had magnetic influences. People need not, unless they are surveyors, selectmen or antiquarians, pay much heed to town lines, and may have forgotten or not have known that in this one town

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are Barnstable, West Barnstable, Centerville, Cotuit, Osterville, Marston's Mills, Craigsville and Hyannis.

The density of population is a friendly topic for statisticians and geographers. The word has a technical flavor, but anybody, it seems, might have an interest in the question of how many people live on a square mile, and how many might live there. In very truth, that problem translated into terms of food and elbow room, too often creates wars and dictates peace, and lies at the root of our most irritating modern questions.

Barnstable County has a land surface of four hundred and nine square miles, and her population for each mile in 1910 was 67.8. This will mean more if we add the fact that Massachusetts as a whole had 418.8 people to the square mile. People on the average mile of the Bay State are six times as many as on an average mile of the Cape.

The only counties that had fewer people for the space were Dukes (Island of Martha's Vineyard) with 42.1; Nantucket with 58.1; and Franklin with 62.6. Dukes and Nantucket, in sea and soil and in isolation, are off the same piece with Barnstable, while Franklin is a rural inland county whose largest center of population is Greenfield. Plymouth Coun-

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ty had in 1910 a density of 213.8. But this county has the town centers of Plymouth and Middleboro, and the large manufacturing city of Brockton. The greater part of Plymouth County, with its glacial wilderness, is akin to Barnstable in the wide spacing of its people.

The Old Colony, or that part of it which lies around the Bay, is, if we except the outer islands, more nearly true to its ancient type of people than any other part of Massachusetts. The three counties of Barnstable, Dukes and Nantucket have fewer foreign born, relative to their total population, than any other counties of the state, Barnstable being the lowest on the mainland. Barnstable had in 1900 a little more than one in ten whose place of birth was across the seas, and in 1910 the fraction rose to 13.6 in a hundred, making in actual numbers 3,769.

Plymouth County had less than one-fifth of foreign-born residents and yet it contains the city of Brockton. If we consider the foreign-born people outside of the big shoe town, they stand in much smaller proportion. Taking Plymouth County, as a whole, although it runs up close to the great mixtures in and around Boston, it has relatively fewer foreign-born people than any county of the Connecti-

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cut Valley or the Berkshire region except the county of Franklin.

Two fifths of the people of foreign birth in 1910, were Portuguese, some from Portugal and some from the Atlantic Islands, in all more than fifteen hundred. Less than a hundred were French Canadian, with about two hundred and fifty English and seventy-four Scotch. These facts show how little alien is a considerable section of the group that is named foreign. There were also about three hundred from Ireland, about four hundred Italians, and not far from two hundred and fifty Finns. Greece sent only two, Austria four, Hungary seven, and Russia thirty-two, while of Turks there were eight. It is plain enough that this corner of Massachusetts has not yet any baffling problems of Americanization, for there is no element of any numbers that is not capable of ready assimilation. Here is one of the most American parts of America.

The conditions thus recited do not, however, nearly represent the full influences of the Portuguese in peopling the Cape, for large numbers of native born had one or both parents of that blood. The greatest concentration of these swarthy people is in Provincetown, where dark faces are common, where Portuguese names are on many signs, and where

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half or nearly half of the population is of this origin.

The representative of a New York newspaper went to Provincetown not long ago, and declared that the old American families there were anxious about the coming census, fearing it might show that the old stock was outnumbered by the Portuguese. According to this scribe, most of the Portuguese at this end of the Cape are from the Azores, and they are admitted to be good citizens, and to have been good and patriotic fighters in the late war.

But, however much the Silvas and Dutras and Enoses are respected, the descendants of the Puritans do not want a Portuguese Board of Selectmen. It would break the order of the centuries on the Cape. The same sort of feeling moved a good lady of the town who a few years ago was having her daughter tutored in the summer vacation in order to get her out of a school in which she was the only American of the old stock. Most of the Portuguese are fishermen but, as the signs show, a number are in the business of the town. They have in considerable numbers mingled in the population of the adjoining town of Truro.

Many of the immigrants of the larger groups, English, Irish and Portuguese, have been attracted by fishing. In addition to this

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motive, there were cheap homes to be had in a region from which the younger native population was moving out in search of larger opportunities. The Portuguese have also added in a special way to the industrial life of the Cape by their skill in tilling the soil, especially in the raising of vegetables and fruit.

All the towns where many Portuguese live have shown much progress in production from the fields. This is true even in Provincetown where soils are scanty, but here the Portuguese bent is mainly for fishing. The Portuguese women of Provincetown are not to be overlooked, for they are known as efficient in service, skillful with the needle, and they are not disposed to let the berries of the swamps and dunes go to waste.

Many of these immigrants, seeking relief from overcrowding and feudal constraint at the old homes in the Azores or in other Portuguese lands, have entered America through the port of New Bedford. If they were not caught by the millwork of that busy center, it was easy to arrive upon the cheap lands of the Cape. These fresh comers are known as thrifty and laborious, and they make good citizens.

No steam or sailing vessels have made regular trips between New Bedford and the Azores

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since the year 1908. Some small sailing vessels ply between the Cape Verde Islands and New Bedford, and bring passengers on their return to this shore. The trade was discontinued during the submarine raids of the war, but has been resumed. The ships are small, and the immigrants are few in numbers at the present time.

Some of the "Americanos" go back to end their days in the Azores, and they seem to be much preferred there to the "Brazileiro." A Lisbon paper many years ago rehearsed the virtues of the Portuguese who had put himself under American training. He was strong in body, good and sympathetic, ready for work and devoted to his family. He had brought culture into his home, and carried back to his native island the patriotic impulses and hopes that he had gained in the United States.

The Brazileiro was branded as lazy, pleasure loving, and untrue to family and religion, as vain, boastful and overreaching. It is not remote to credit his Puritan neighbors and the pressure of the New England environment, with the virtues of the Americanos, making due allowance for the exuberance of the Latin journalist.

The recent immigration, mainly of the last twenty years, has concentrated more espe-

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cially in the town of Falmouth. There are two classes of these people. The Bravas, or black Portuguese, come from the Atlantic Islands and are said to be a cross of African negroes and Portuguese exiles. The white Portuguese hold themselves quite above the blacks, and have no intercourse with them unless it be of employers with the employed. These newer immigrants have not yet come into American notions of womankind, and the consequence is that the wives and children, even young children, do long days of work in the fields. These people have brought from the religious connection of the old country little loyalty, but some measure of superstition.

The new Portuguese have not only gone to Falmouth, but especially to the eastern parts of the town, the whites being at East Falmouth and the blacks at Waquoit. One of the good ministers of Falmouth has in recent years given himself with true zeal and self-sacrifice to the modernizing and Americanizing of these people, employing night schools and other means of enlightenment. In the district school at East Falmouth in the winter of 1918–1919, there were a hundred and eleven children of whom nine were American. All the rest were the offspring of foreign-born Portuguese parents.

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Some nine hundred make up the Portuguese count in these eastern parts of Falmouth. A few have made much progress and have become excellent citizens. Some Portuguese are credited with an intent to control town affairs within a period of seven years. They are mostly on the soil, but a few are carpenters and painters. In 1918 it was a Portuguese girl who took first honors in the Falmouth High School.

The new farmers are working northward in the forests lying toward Hatchville in Falmouth. Some of the homes are very decent bungalows, especially to be found on the road north from Teaticket. There is one settlement of nine houses, of which eight are Portuguese, and only one, the worst of all, the property of a native. The Portuguese are rapidly acquiring motor cars, which, with fair roads on the outwash plain, opening to the trunk highway of the south shore, are useful for marketing. There is a considerable group of Portuguese in the town of Barnstable. A dozen houses will be found in the scrub, not far from Hyannis, on the road leading to Yarmouth Port.

Some Portuguese have drifted eastward into Harwich and Chatham, thus giving the Cape an invasion at both ends; an earlier incursion from the north and a later one from the south-

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west. The Portuguese women of Harwich make a season's round which not only fills their pockets but flings an interesting sidelight on modern Cape activities. They begin in the spring with picking the May flower, the arbutus, with which this sandy corner of Massachusetts is blessed. This they peddle, to a reward of forty dollars apiece it may be. Then our hardworking and thrifty woman goes to Falmouth and nets a hundred dollars in the strawberry harvest. She returns home for the blueberry season, and when these are done the cranberry gathering is on and autumn has come.

Some of the men get jobs at the aviation camp in Chatham, others work on the railroad, and the middle autumn requires considerable work on the bogs, after the berries are harvested. The labor problem does not much distress the Portugee—he raises his own working force, feeds, clothes and does not fail to employ them. A boy of this race went astray and was haled to Barnstable Court. The judge asked if his father was present. He arose among a crowd of his countrymen, and to the question—how many children have you—said, twenty-three. I did not ask your age, rejoined the magistrate—how many children have you? Twenty-three, was again replied, and none

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went wrong but this one. Take the lad, said the judge—and see if you can make a good boy of him. So it appears that the Cape will have people, but they will not all be *Mayflower* descendants.

Italians have not made much way on the Cape, but form a small colony in Sandwich, where they live in the old houses around the abandoned glass works. They work chiefly in the Keith Car Works at Sagamore and go thither by bicycles, jitneys and the trains. The Finn Colony is in the western environs of Barnstable village, where these people raise farm and garden crops, dig clams, and now, like the Italians, seek the more ample returns of shop work in Sagamore. The Finns continued to come until the opening of the war.

The foreigner has not made much impression on the life around Cape Cod Bay. If there be exceptions they are found in the shop neighborhoods of Plymouth and Sagamore, on the farms of Falmouth and in the fishing industries of the lower Cape. The newcomers have not made enough progress to take any appreciable part in the government of the towns. Falmouth, for example, has its thousand Portuguese, more or less, but the roll of its town officers points to an astonishing maintenance of the ancient traditions.

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The list of officers and committeemen in Falmouth for a recent year contains about a hundred and thirty names. The designations of the various committees are of the pure flavor of old New England. We find a herring committee, surveyors of wood, fence viewers, field drivers, surveyors of lumber, public weighers and a committee for the care of public wells. One from west of the Berkshires has to have some of these enigmas solved for him, but he can well imagine all sorts of arbitrations and adjudications of neighborly or unneighborly differences of opinion.

This list of a hundred and thirty names in Falmouth does not include a single name that strikes one as foreign, and they are nearly all of British origin. Only one or two have distinctly Biblical names. This would be different if we were to follow the records back. Even in 1872 the list has a Meltiah, a Job, a Zaccheus, an Ezekiel, a Jabez and a Joshua.

The legislation of the town meetings shows a survival of old ways and thoughts in the official life. Among the "articles" in the report of the town meeting of 1917 is this—"To see if the town will vote to restrain horses, neat cattle and swine from running at large within the limits of the town the year ensuing; voted that they be so restrained." "To see if the

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MANY LIKE THIS ON THE CAPE

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town will vote to sell the herrings from one or more of its rivers," etc. Then follow the various regulations of the herring catch that were voted.

If there can be such a thing as a cheerful burial place it is the modern cemetery of Falmouth village. Seen in an August Sunday morning, it joined in perfect blending the loveliness of nature with simple art and gentle memory. It is a natural forest, oaks and a few pines, open to the sun which floods the silky green of the turf, the brilliancy gently toned by the shadows of the trees. The lots are in low terraces, and the monuments and headstones are modest and simple.

The names on these stones taken at random are a perfect record of Americanism, or if you please, of the Anglo-Saxon blood. Here are the names—Swift, Bourne, Baker, Pierce, Clark, Lawrence, Walker, Davis, Thayer, Phinney, Williams, Spencer, Turner, Waters, Gifford, Jenkins, Hatch, Nye, Fish, Crosby, Robinson, Wright, Hamblin, Sanford. These names in their silence are vocal of old Falmouth and the old Cape, and they show too, modern as this God's acre is, how the old life is preserved in the new, as the third century comes to its end.

In the thin volume which records the doings

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at the two hundredth anniversary of Falmouth are given fourteen names of those who landed here in 1660, which were still here at the time of the bicentennial. Of the fourteen, five are living names in Falmouth to-day. The five names are Jenkins, Hinckley, Hatch, Robinson and Hamblin. For a century and a half nearly every Falmouth family was represented on the ocean. To-day the roll call would reach far over the continent but the heart of the older life still remains in the town which gave it birth.

Mashpee in all its history probably never had as many as four hundred inhabitants and has always had a smaller count than any other town of the Cape. Someone has volunteered the wise opinion that the town did not develop because of its remote situation. It is hardly to be called far away, however, for it has its bit of the Vineyard Sound bays and shores, and is crossed by the main road from Falmouth to Chatham. It has its share of soil and more than its part of beautiful lakes and running waters.

The limitations of Mashpee have always been in its people. Here the remnants of a once widespread Indian population were gathered. Here good men sought to convert, educate, and uplift them, and bad men crowded

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them off their lands, and took advantage of them. It is the old story of the ultimate submergence of every lingering bit of the red race.

Richard Bourne and his noble successors, who devoted lifetimes to the salvation of their little flock around Mashpee Lake, and counted with joy the number of praying Indians, might have a shiver of disappointment, could they see the woods and streams and scattered homes and people of Mashpee to-day. We are told that peacefulness reigns there, where no pure-blooded Indian has lived in many long years. The infiltration of negro and Portuguese dark blood, has produced what to the casual comer would not seem to be other than a real community of Africans. No doubt the truth as to Mashpee culture is somewhere in the mean, for the Mashpee combination is not exactly a theme for lyrical fervor, and yet it is on the whole a respectable community of dark-skinned farmers and laborers who return at night to rather primitive houses, and do the best that less than three hundred limited people can do, to keep moving the machinery of a New England town.

Two hundred years ago Harvard College was made the trustee of a fund from an English benefactor, and to this day the college annually pays over the income of the endow-

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ment for the support of the Mashpee Church. Other influences from the great institution at Cambridge are near enough in the summer months to shed their light upon this dark people, in whose domain the summer sun is as glorious as anywhere on the Cape, and the winter cold is often as pronounced and invigorating as in the Berkshires or the Green Mountains.

The population of the Cape has sent out its full share of distinguished sons into the world. Nathaniel Gorham, President of the Continental Congress and signer of the federal Constitution, was descended from Captain John Gorham of Barnstable. The Otis family having first settled in Hingham, John Otis, Senior, and John Otis, Junior, removed to Barnstable and built near the Great Marshes the homestead where several generations of Otises made their home. A number of men of this line gained distinction in Massachusetts and in the nation. James Otis, "pioneer of the American Revolution," was born in the Barnstable farmhouse in 1725. Harrison Gray Otis, whose life has recently been written by one of his descendants, Dr. Samuel E. Morrison of Harvard University, was born in Boston in 1765, but he, with some members of the family, took refuge in the old Cape homestead in the troublous

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times that beset Massachusetts in the opening months of the Revolution.

Chief Justice Lemuel Shaw, and Professor John G. Palfrey, the orator at the Barnstable celebration in 1839, were both of Barnstable lineage. William Everett, the distinguished headmaster of the Quincy school was a great-grandson of Nathaniel Gorham. Among well-known living persons are the Swifts of the great Chicago packing houses, whose forbears were residents of Cape Cod. The President of Brown University, Dr. William H. P. Faunce, is descended from Elder Thomas Faunce, whose ashes repose on Burial Hill in Plymouth. It was he who by a long life of high service, joined, in his tenacious memory and facile speech, the early history of the Pilgrim fathers to more recent days. The first American Faunce came in the *Ann* in 1623, and Elder Faunce was, just before his death, the only remaining person who had talked with the sons of the *Mayflower* people. Major General Leonard Wood is also of Cape Cod origin.

Scores of small cities there are in our crowded East, any one of which has as many men, women and children as have ever lived at any one time in Barnstable County or in the Town of Plymouth. It is idle to inquire whether the Bay shores will ever have a larger

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population than they have had in the past. The value of populations is not in their numbers but in their quality. It is not even so much in what they have done—the quantity of fish they have caught, the corn and cranberries they have raised, or the products of their few and scattered mills—it is what they have been and what they have thought, that have given them their place in the history and the affection of Americans. Such are the influences which have made the face of this half-barren foreland of more meaning than the fertile bottoms of great valleys or the fat soils of the wide prairie.

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CHAPTER IX

THE ENVIRONMENT OF THE SEA

THAT distinguished New England preacher, Horace Bushnell, once made a sermon, or wrote an essay, on the moral uses of the sea. The wisdom of men, he thought, would not have covered three fourths of the sphere with water, but would have made leviathan give way to the reapers, on a good round ball of meadow and ploughland. But, saying nothing of moderated climate and needed rain, he thought there were larger and wider needs for the sea. Brotherhood and enlightenment may grow out of trade, and exchange of ideas and goods is easy between Boston and Singapore, but difficult between Timbuctoo and Samarkand.

Moreover, the medieval shackles of the old world would gradually have lapped over into the new, if there had been no Atlantic Ocean, and there would have been no reserved continent on which man could try a fresh experiment in institutions. One looks for stagnation

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in the heart of the Alps or in the Kentucky mountains, but "the shores and islands of the world have felt the pulse of human society and yielded themselves to progress."

No easy problems are these, and there is no thought of dragging the Old Colony deep into earth philosophy. Most of the Pilgrims had been farmers and artisans and many of them found themselves, or at least their grandchildren and great-grandchildren, digging clams, catching and drying fish and sailing vessels.

How deep the change went, or whether it struck really below the surface of their lives, may be a question. It is safe enough, we may be pretty sure, to bury the notion that the shores and storms and hills and boulders of New England made them into another kind of people from the company that sailed out of Delft Haven. Probably the Pilgrims changed New England more than New England changed the Pilgrims. The *Mayflower* Englishman was old in his heredity of character when he came to Plymouth Rock, and he has not changed so much in his three hundred years on this side of the Atlantic. The setting of his day's work and of his season's toil, is quite different from Scrooby and Austerfield, and he has shifted from the occupations of his fathers, throwing off meanwhile some of the

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austerities of Puritanism, as have his *Mayflower* cousins in New York and Ohio.

All this is not to toss overboard our faith in what environment does to us, it is only announcing at the outset that surroundings are not everything, and whatever their deepest influences may be, they require a long time to exert them. The first of the Old Colony folk had been subject to other sorts of environment for millenniums, but what had happened to them thereby we cannot trace. We know what they were in 1620, and what kind of a land they came to. That new land made over their outer ways and in some fashion no doubt bore in on their thought and inner life.

We may remember that the motherland of the Pilgrims is little in square mlies, but big in coastline, that Britain has a place in the world out of all ratio to her size. If we remember that nobody in Great Britain lives more than two or three hours from the sea, perhaps we shall know why the Old Colony is so small and yet so large in America. When Tennyson wrote,

> Broad based on her people's will
> And compassed by the inviolate sea,

he brought a fact and not an argument. But it would be easy to make the argument, and to read the logic between the lines.

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The compact drawn in Provincetown Harbor sounds like the work of democrats and freemen. If the men were such, and if their environment had somewhat tended to make them such, it was the insular environment of centuries that had been doing it. The east winds and the toil on Plymouth shore did not beat it into them in a day.

We have no idea of setting up a title to this last chapter on the Old Colony, and running away from it, as if the neighborhood of the sea had meant nothing from 1620 to 1920. It has meant much, and if we would comprehend how much, we might ask what the Pilgrims might have become or have failed to become, if they had not stopped on the shores. Suppose they had gone far inland. We might possibly read their history in the story of equally free and strong men who moved along the Great Valley of the South, and spread out into the secluded uplands of the Appalachians to fossilize for generations.

The Pilgrims did not settle on an island, but it might almost as well have been. On the Cape they could go but a few miles from the sea—rarely did they plant their houses a mile from the strand. In Plymouth and Kingston and Duxbury they lived upon the shore and back of them was a wilderness which only

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stern necessity made them enter. Their lives fronted the main.

They found the soils none too extended or good, and the factory era in New England was scores of years in the unseen and undreamed future. They were forced upon the sea. Perhaps there was more democracy in this, and certainly there was outlook on the world of the seventeenth century, a world whose magnitude had then but dawned on the race. They were a part of the outgoing into that world from that most effective of colonizing nations, whose sons to-day make nothing of ploughing or fighting at the antipodes.

One of the keenest English students of earth science thinks fishing is a training in democracy, "based on the equality of man and man in the jointly-owned boat, and the equality of man and woman in the common home from which the fisherman is absent so often and so long that dual control must be evolved."[1] Lyde thinks constitutional government has everywhere grown out of the domestic organization of a fishing race, whose members are brave and enduring, lovers of freedom and space, individualistic and conservative. Elsewhere this writer characterizes the sea as the great nursery of democracy.

[1]Lionel W. Lyde, *The Continent of Europe*, p. 12.

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If half of this could be proven true, the Pilgrims, responding to the inviting waters that washed their shores, came under an influence that strengthened the independence and rooted the principles which they brought across the sea with them. Moreover, a writer who knew New England as well as Lyde knows old England, comments on the degeneracy or half-savagery that is likely to go with the fur trade, while fishing "made the hardy fisherman and bold sailor of the New England coast. The fur trader debauched the Indians, profiting by a toil not his own. The fisherman, industrious and capable, more or less interested in his ventures, controlled the seas from the foothold in his boat, and mastered individual freedom on the land."

The Pilgrims might elsewhere have found a lean and sandy soil, but there was another influence, or condition, of greater power—the Old Colony climate—and that was mainly ordered by the sea. While there is some sign that they felt its greater rigor as compared with England, nevertheless they thought it remarkably similar in its temperatures to the land from which they had come.

In *Good News from New England*, included in Winslow's *Relation*, the writer gives an account of the climate which we would not cut

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short. "Then for the temperature of the air, in almost three years experience I can scarce distinguish New England from old England, in respect of heat and cold, frost, snow, winds, etc. Some object, because our plantation lieth in the latitude of 42°, it must needs be much hotter. I confess I cannot give the reason of the contrary; only experience teacheth us, that if it do exceed England, it is so little as must require better judgments to discern it. And for the winter, I rather think (if there be difference) it is both sharper and longer in New England than Old; and yet the want of those comforts in the one which I have enjoyed in the other, may deceive my judgment also. But in my best observations, comparing our own condition with the *Relations* of other parts of America, I cannot conceive of any to agree better with the constitution of the English, not being oppressed with extremity of heat, nor nipped by biting cold; by which means, blessed by God, we enjoy our health notwithstanding those difficulties we have undergone."

There is much to admire in this story—it has in quaint phrase a scientific temper quite worthy of the present age. There is no attempt to explain what was to the writer inexplicable, not knowing the influence of the

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Atlantic drift and the westerly winds on the more northerly parts of Europe. Then too the oceanic character of the climate is brought out, that is, its evenness and mild temperatures, though the cause is not recognized; and finally there is full allowance made for the possible bias of personal impressions.

The winter of the settlement is thought to have been mild, with little snow, otherwise the little community might not have buried their dead as they did on Cole's Hill, or have carried on so effectively the building of their cabins. Great storms would come, though not perhaps in their lifetime, a winter uproar, as in 1815, around the Buzzards Bay shores, when salt houses were destroyed, trees killed by salt overflow into fresh swamps, springs and wells made salt where not directly reached by the flood, and the tide eight feet above the common levels; or like the storm a century earlier when the Indians dug a tunnel through the snow in Eastham that they might carry the body of their beloved pastor, the Reverend Samuel Treat, to its rest.

But commonly nature does not put on her sternest moods on the Cape, save at the sea border, where every winter's winds and waves lash the shore—and raw and biting blasts laden with sand sweep across the open fields, and

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L. M. Small, Photo

SHORE ICE IN THE BAY

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from earliest times have taught the Cape dweller to build his house low, planted in a hollow or behind a forest, with his apple trees and gardens.

The climate is oceanic, and much is compressed into that rather scientific word—refreshing summers, and moderate cold in winter. The Wellfleet oysterman, truly, no doubt, told Thoreau that no ice ever formed on the back of the Cape, or not more than once in a century, and but little snow lay there.

The greatest thickness of ice on the ponds back of Provincetown is about nine inches, and in some winters there is no ice harvest at all. There were eight inches on a small pond below Mashpee Lake in the winter just passed, but in the previous winter, which was cold everywhere in our northern states, the Cape was not overlooked, for there were twenty-four inches of ice on Mashpee Lake, and automobiles freely roamed upon its surface.

Nor must it be supposed that summer heat never oppresses. Even Provincetown, if it must be said, is sometimes hot, behind its rampart of dunes. The historian, Dr. Freeman, says of the favored position of some old salt vats, "the sand hills under which they stood reflected on the vats a strong heat." In a land which men love, the climate is almost

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always called "favorable to longevity," and Freeman bears it out, to a degree at least, by asserting, for about the year 1800, that Chatham, with 1351 inhabitants, was so healthful as not to justify the settlement there of a physician. This devoted son of the Cape sums up his loyal admiration thus—"The Cape is and was so intended by the Allwise to be a good land, surrounded by goodly seas, blessed with an invigorating and inspiring atmosphere, supplying all needful comforts to its possessors."

Standing up seven or eight feet above the ground of a small triangular park in Falmouth village is a glacial boulder. It is surmounted by an anchor lying about eight feet along the top of the rock. On the face of the stone is a bronze tablet, showing in low relief a sailing ship. On the border is a knotted rope, with a starfish at each corner, and under the ship is this inscription—

Dedicated by the citizens
and
Public school children of Falmouth
In loving memory of her
Seamen
1907.

Here is the homage of a new century to daring ancestors and a romantic past. Yesterday the Cape belonged to the sea—does it belong to-

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day to the land? Has the Cape Codder, ceasing his far wanderings, set his face to the land? Having shaped the life of the Pilgrim and turned him into a fisherman, a whaler, or a master of world trade, has the sea lost its grip on the present sons of the Cape and left them land grubbers, devoid of distances?

Hardly is the land thus degenerate. If one looks up, and one cannot help looking up, the same water is there, yet never the same, coming from somewhere, moving some whither; the same colors, but never the same—blues, greens, purples, grays and what not, putting to shame anybody who cannot analyze a rainbow. The horizon is shut away in mist, or it rims the view as sharp and far away as it was in any clear day in the year 1620.

Here is the same beach, yet remodeled by every tide and revolutionized by every storm. You see the same cliffs, yet moved a little inland, scarred and gullied in a slightly different pattern, undermined and collapsing now here, now there. Something of the moving picture is this Cape—beacon fires, refuge huts, and meeting-house steering have passed away, but lighthouses, the life savers' well-built houses, and Scargo Hill and Manomet arouse the same thoughts of the sea and its toilers, of the ships

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and their dangers, of the waves and their escaping prey.

Not many structures are so alluring as a wharf. The laden fishing boat in Bergen, Great Grimsby, Plymouth or Provincetown, will call a crowd, and a good haul from the lobster traps awakens other than housewives and hotel chefs. It is the sea and a harvest gotten out of it that appeals—the benevolence and happy chance of it, as well as the toil and daring of it. Of course the devotee of brook trout and deer and forest trails will have his ardent say, and the sea lover is too sure of his shore and his ocean to care.

Common things get a new glory when they are mixed with the sea. The boat heading for New York, whether seen as of yore in the twilight outside the Cape, with all lights on, or more dimly from the Plymouth shore out in the Bay, aiming at the Canal, has more fascination than the equally brilliant, swifter moving New York train. The coal barges make one think of Pennsylvania mines, of the wharves of Philadelphia and Newport News, of the cotton mills of Salem, the shoes of Brockton and Lynn and the shops of Boston, but it is more than an everyday bit of trade and stern toil, it is the world's interchange, the cosmic highway and the life of man.

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This is the fascination of Mr. Lincoln's homely heroes of Cape Cod. Rough they may look, plainly and profanely they may speak, but they are no longer common persons, they impersonate struggle, daring and achievement, they have gone down to the sea in ships, they have done business in great waters, they see far beyond the doors and dooryards of their low shingled cottages and you see with them. The toothless grandson of Johnny Trout, spending the peaceful holiday of his old age, sparkles with the vitality of the ocean and pours out upon you the remembered lore of Batavia and Melbourne. So it must ever be on the Cape, for here the voyagers of the sea have come to land and here the toilers of the land come down to the shore to breathe, and to look out widely.

The dweller on Old Colony shores can hardly have escaped being a lover of the sea. It is born with him, lives with him, and is handed on to his children. What this does for him can not so well be defined as dreamed of, for so it is with all love. We are quite aware that no less a person than Henry Van Dyke tosses all this aside. "The sea is too big for loving and too uncertain." Indeed some ambitious persons have loved the sea, deluded people who have not discovered that it is a formless and

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disquieting passion—to devote one's self to a "salt abstraction." It is like loving a nation's type of woman, Van Dyke thinks—better one of them. Hence, we suppose, one might turn to little rivers. But little rivers may dry away, or plunge underground. Rivers are temporary things in a continent's unfolding, often made up of scraps, pirated by other rivers, mutilated by engineers, fouled with man's refuse, persecuting one with mosquitoes, tearing the flesh with briers, and bruising the feet with stones.

One might say that God too is great, and inscrutable, for one would not like to call Him uncertain. Would the distinguished clergyman think God too great to be loved? The soul if capacious enough may love what is great. And it hinges on what one means by loving. The Pilgrim lived, and his offspring live, by the sea. If they love it, does it mean to be drawn toward it, inspired by it, to be awed by its mystery, thrilled by its vastness, to have imagination roused by its depths, its spaces, its plenitude of life, mother of all life? Does it signify reveling in its infinitude of changing colors, to join with every breaking roller on its shore in our short sojourn by it—the waves that have not rested in eons, yet tidal to the predictable moment of rise and fall and least of all "uncertain"?

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QUISSET HARBOR

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We watch it destroying lands, rebuilding continents, engulfing the works of man, and man himself—terrible, is it, rather than alluring—well, on the whole reckoning, the ocean, remorseless as it seems to be, has been friendly to humankind. It depends on the size of your loving, whether you want the distant view, and not a foreground, a trout instead of a cod, a swordfish rather than a leviathan.

So leaving all to love their river, their mountain, their lake, their forest, or their ocean, as they will, the Cape man seems to line up with that elder New England prophet, who, broad beyond his time, wrote, "It is of the greatest consequence, too, that such a being as God should have images prepared to express him, and set him before the mind of man. . . . These he has provided in the heavens and the sea, which are the two great images of his vastness and his power."

> Dark-heaving, boundless, endless, and sublime.
> I gaze—and am changed at the sight.

It is easy enough to say that if one brings his idealism with him he will be inspired by the sea. But the sea like other things might be staled by custom to him that lives by it. A man might, as some are said to do, get all his firewood from the beach, and never wonder

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where the battered log grew, who sawed and spiked the plank, what ship lost the new lumber in the rolling of the storm, or who uncorked the empty bottle.

When wrecks off the shore were more frequent than they are now, moon cursing—(Cape Cod—moon cussing) was more common than it is to-day. Yet to-day, if you drag up a plank beyond the grasp of the wave and put your name on it, he is no proper son of the Cape who would not respect your ownership, and leave the piece until you found it convenient to bear it up the cliff. The "mooning" follows the traditions of that old-world and old-time period of piratical crews who used to decoy vessels on the rocks by false lights and cursed the moon when she disturbed their diabolical work. Laws and humanity have eliminated the savagery, for the Cape man would rescue rather than ruin, and if the wreckage be above a certain value he must advertise and seek the owner, before he can claim it as his own.

Wreckage is not so common as it used to be, in these days of steamships, yet a man, hardly now in middle life, recalls salvaging fifteen thousand feet of lumber which he hauled up the outer cliff with ropes and tackle. A couple of hundred feet of heavy hawser was

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another ocean gift of no mean value, and our friend's father recovered a valuable tiger skin, racing to it with a Provincetown deacon, who, tradition allows, was very angry. Brussels carpets and cases of champagne have been drawn sometimes from this titanic grab bag. Was Cape Cod a bad place for morals, we ventured to inquire, "No, but when they go moon cussing look out!!" All of which seems to mean that here human nature varies in its expression by force of circumstances, but its substance is as everywhere. Some think Cape people are especially "thrifty." So to judge is not to display a wide acquaintance with villagers and countrymen, live they where they may.

The seaward compulsion of the Cape did not escape the acute mind of Timothy Dwight, who did not fail to see why the houses were built in valleys and defended by forests. The children of Provincetown played as familiarly in the water as other children frolic in the streets, and little boys managed boats with skill. Every employment seemed connected with the sea. And the moral influence of it was peculiarly in Dwight's province. There was the broadening influence of the sea, of sailing the ships and receiving strangers, for "while most of their countrymen have been chained to a small spot of earth, they have

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traversed the ocean." Perhaps he would have agreed with a later writer that distances enfranchise, while altitudes enslave.

How many would live on the Cape or go to the Cape, if it were so much land and just such land, in an interior situation? A little farming, a little fresh-water fishing, a little hunting, no water power, no mineral wealth, forests for beauty but not for the lumberman—nothing—until we get the view of that visitor who counted the real area as triple the actual surface, reckoning in the adjoining sea, for its manifold production as compared with the fields, and, quoting Fisher Ames, "every cod-fish drawn up has a pistareen in its mouth."

How much is there on the Cape that is not for the sea, or of the sea, or does not suggest the sea—the monument of Provincetown, memorial of a sea voyage—the lighthouses, the life-saving stations, the wireless towers, the old windmills built because there was little fuel, no water power, and there were winds of the sea—wharves, villages, low houses, kettle-hole gardens, drooping goldenrod, shrinking apple trees, pitch pine carpets on the sand—man and nature all attuned to the majestic overlordship of the sea.

Somewhat has been written of the supposed naïve ways of the Cape people. Something

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like this has perhaps come to be expected by readers who never went nearer the Cape than Scituate or Providence or, perhaps, were never east of the Berkshires. This misconception has grown by what it has fed on for three fourths of a century. Some, at least, of discerning people who have gone up and down the length of Barnstable County for years have never observed that a trainload of Cape natives chatters more vociferously than other trainloads, and have never seen half the train "leaning out of the windows" conversing in shouts with the villagers.

The Brewsters along the railway are not bewilderingly numerous, and no one should count on seeing all Provincetown out to meet the train. These good people do not jostle for the papers as hungry chickens reach for food, nor keep you off the sidewalk, nor behave otherwise than as the average Pilgrim descendant, or cultivated New Englander, or Americanized Portuguese should treat his casual neighbor.

If Shaler wrote truly of that "deep and peculiar enlargement" that comes to dwellers by the sea; if Lucy Larcom knew in very truth that one reared by the sea requires a wide horizon for the body and the mind, shall we find the Cape supporting these well-settled notions

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of the scholar and the story writer? Thoreau, it may be quite safe to think, did not conclude that all the people of the Cape, of Falmouth, Barnstable, Chatham, Orleans and the rest, were as ignorant and provincial as some of the queer characters which he liked to encounter, and did find, in his out-of-the-way itinerary, nor would he, we fancy, subscribe to the conventional admiration of his odd genius, which assumes that he said the last word about the dwellers on this foreland.

Barnstable County folks probably do not need a defender, nor do they perhaps care so much what is written about them. They will proceed with intensive farming, will catch fish, manage hotels, live at leisure on their income, send their children to normal schools and colleges, and do their share of work and thinking in that fine old New England of which they are a part.

Suppose a Cape Codder did visit New York City, and did therefore "have something to talk about to his neighbors all winter." And suppose he was devoid of ambition and went to his burrow every autumn with a half-barrel of pork, five hundred pounds of salt fish, some potatoes and a few cords of wood; or suppose he is "different" being slow to change; grant all these things—could not one find these

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types in Maine, or Vermont or the Empire State? Why must we feel compelled to discover on these fascinating shores a people who never existed, whose quaintness could be matched on any other shore and outdone in the recesses of any mountain region.

It is not easy to wean the Old Colony man from his native shores. He may go where he will at the call of duty or opportunity, but the pictures of memory stay with him and he often hears the call to return. And he comes back to rest, to meet the old neighbors, to rebuild the paternal cottage, to refurbish the mansion of his sea-going ancestor, to amuse himself with the cranberry bog, to experiment in modern farming, to roll over the roads that in his boyhood were down in the sand. Perhaps the call is stronger, and he returns to finish his days. It is not the old friends, for many of them are gone—it is not the lakes or forests, for others are as beautiful—it must be the lure of the ocean, the sea blood has never gotten out of his veins.

Let not a belated lover of the Cape, but another, better fitted, say it, "A Cape man finds nowhere else so glorious a home, so full of such sweet memories. The Cape colors him all his life—the roots and fiber of him. He may get beyond, but he never gets over the

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Cape. . . . He will feel in odd hours, to his life's end, the creek tide on which he floated inshore as a boy, the hunger of the salt marsh in haying time, the cold splash of the sea spray at the harbor's mouth, the spring of the boat over the bar, the wind rising inshore, the blast of the wet northeaster. He will remember the yellow dawn of an October morning across his misty moors, and the fog of the chill pond among the pine trees, and above all the blue sea within its headlands, on which go the white-winged ships to that great, far-off world which the boy had heard of and the grown man knows so well."

We have heard a historian question whether the Plymouth Pilgrims were a great and formative force in American life. But a plain and not unobservant American, if no historian, believes still that it was not so much a matter of numbers or constructive statesmanship in colonial and federal days as of high and pervading sentiment. It was what the Pilgrims were that mattered—how they thought and lived told the story. It is not so important, perhaps, if the men of Boston and the other people on Massachusetts Bay fill more pages in political and military history than the plain men of Plymouth, Sandwich, Barnstable and Provincetown.

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THE POWER THAT CHANGES THE SHORE

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When the *Mayflower* anchored in the outer haven of the Cape, and her tired voyagers waded to shore, and when, after cold and stormy search, they landed on the Plymouth side of the Bay, they fixed the destiny of a continent. They lived and died on the borders of Cape Cod Bay, and thither others came to fill up their shrinking numbers. All these were forerunners of Massachusetts, of Rhode Island and Connecticut, of all New England. In time New England passed into New York, and from New York to Ohio, and Wisconsin. Within the memory of our older men, Iowa, Nebraska, Colorado and Oregon have felt the pulse of the Puritan energy.

In morals and religion, in constitutions and laws, in trade and education, old England laid hold of the outstretched Cape, and thence began its march to the western sea. No other continent entangles itself in the sea with a land just like the Cape. It is long and narrow and crooked; it is of low relief, of frail materials, changeable and poor, exposed to wind and wave—it is land, but land ruled by water, its sands and storms, its herbs and trees, its men and its daily tasks controlled by the sea.

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